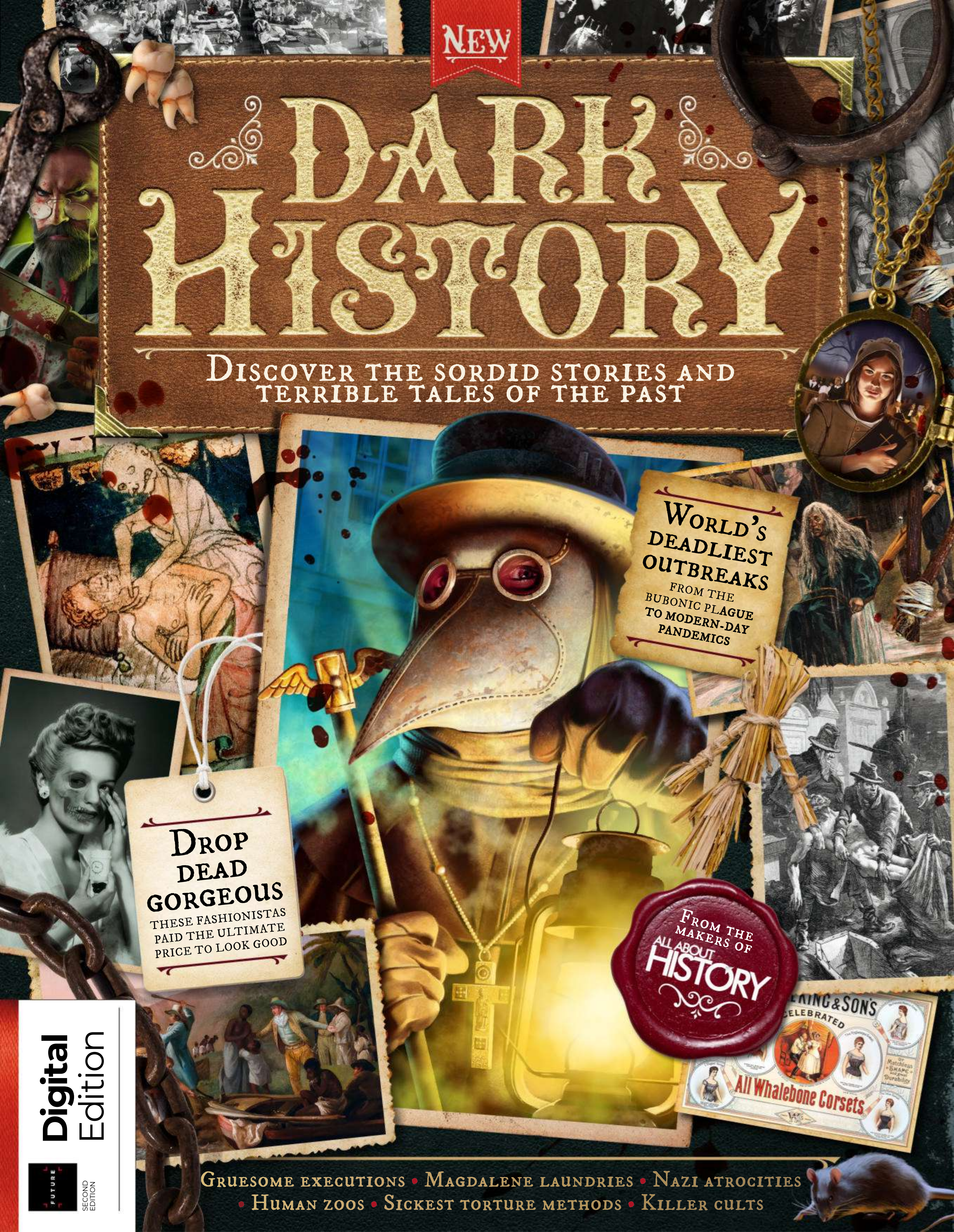

NEW

DARK HISTORY

DISCOVER THE SORDID STORIES AND TERRIBLE TALES OF THE PAST

WORLD'S DEADLIEST OUTBREAKS
FROM THE BUBONIC PLAGUE TO MODERN-DAY PANDEMICS

DROP DEAD GORGEOUS
THESE FASHIONISTAS PAID THE ULTIMATE PRICE TO LOOK GOOD

FROM THE MAKERS OF ALL ABOUT HISTORY

Digital Edition

SECOND EDITION

GRUESOME EXECUTIONS • MAGDALENE LAUNDRIES • NAZI ATROCITIES • HUMAN ZOOS • SICKEST TORTURE METHODS • KILLER CULTS

WELCOME

Mankind is remarkable – we've sent man to the moon, cured killer diseases, conquered the peaks of the world's highest mountains. But mankind is also abominably ambitious, capable of committing unspeakable evils in the name of progress. Over the following pages, we'll explore some of the most diabolical moments in human history, from sickening medical experiments to the most barbaric torture methods. We'll also delve into pivotal moments that have shaped the world we live in, from the legacy of slavery in the US to how the horrors of the Holocaust came to light.

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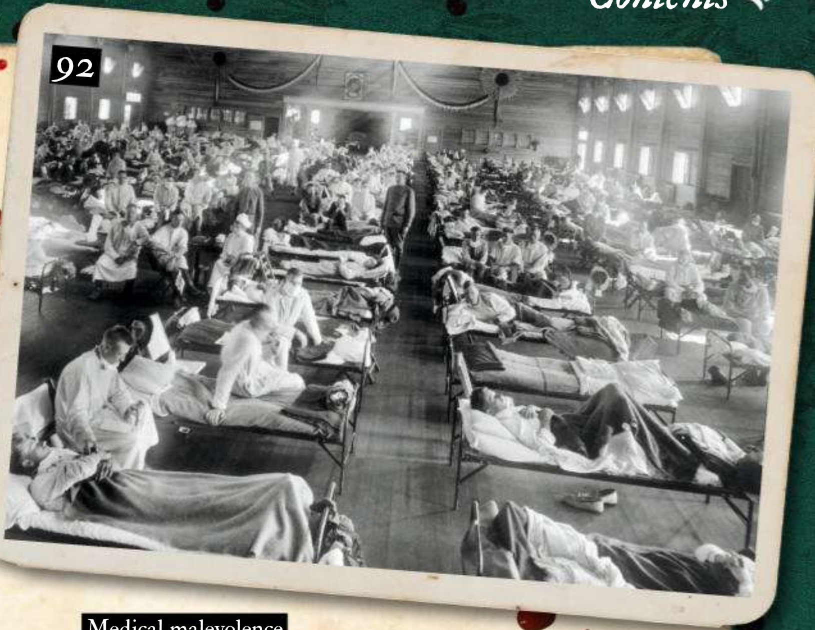
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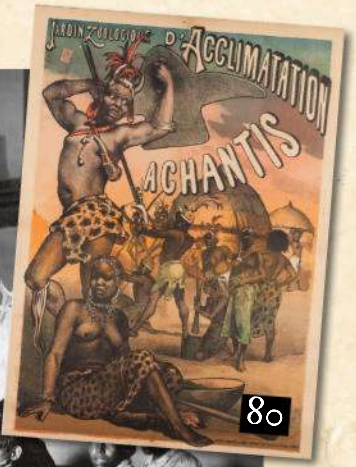

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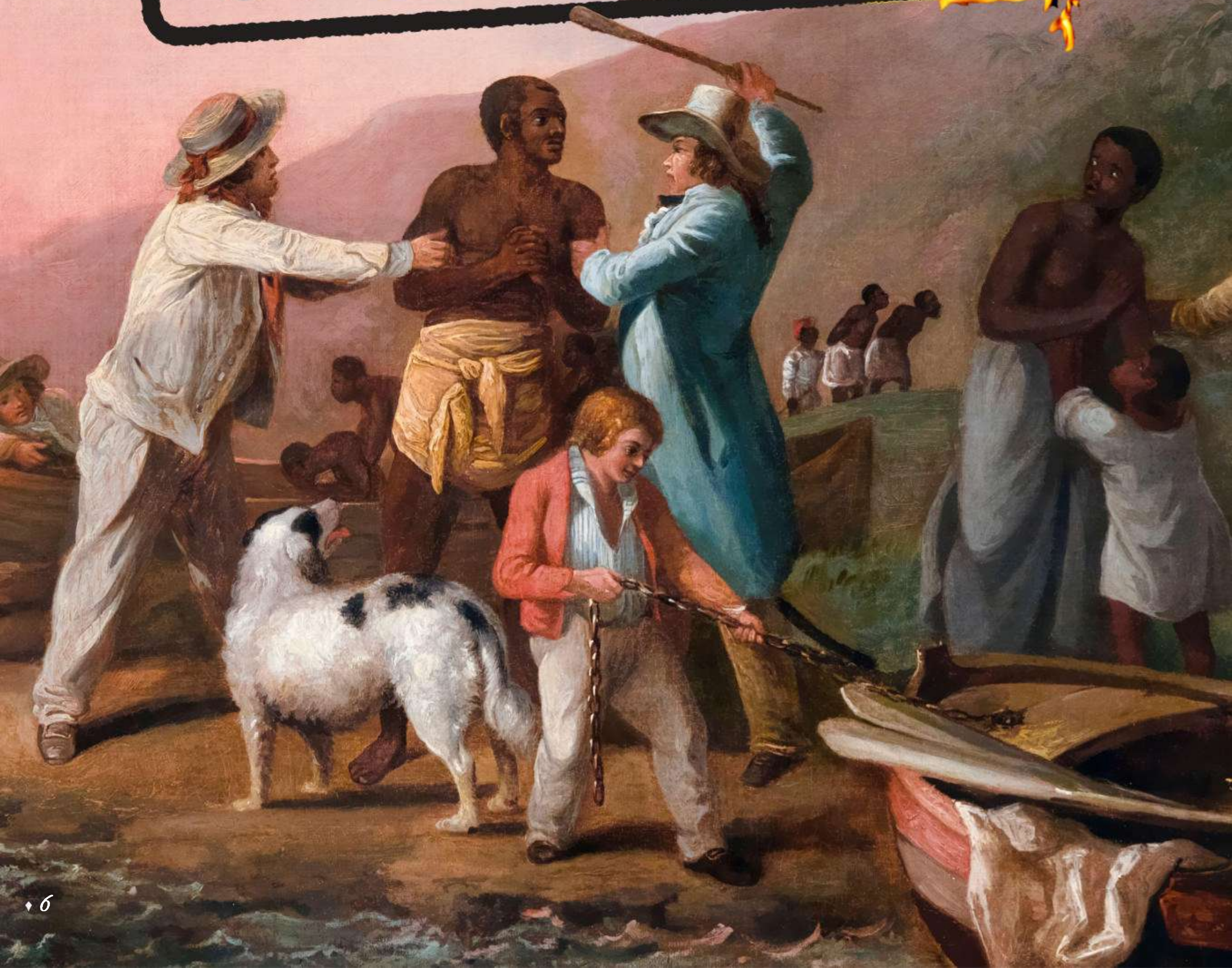
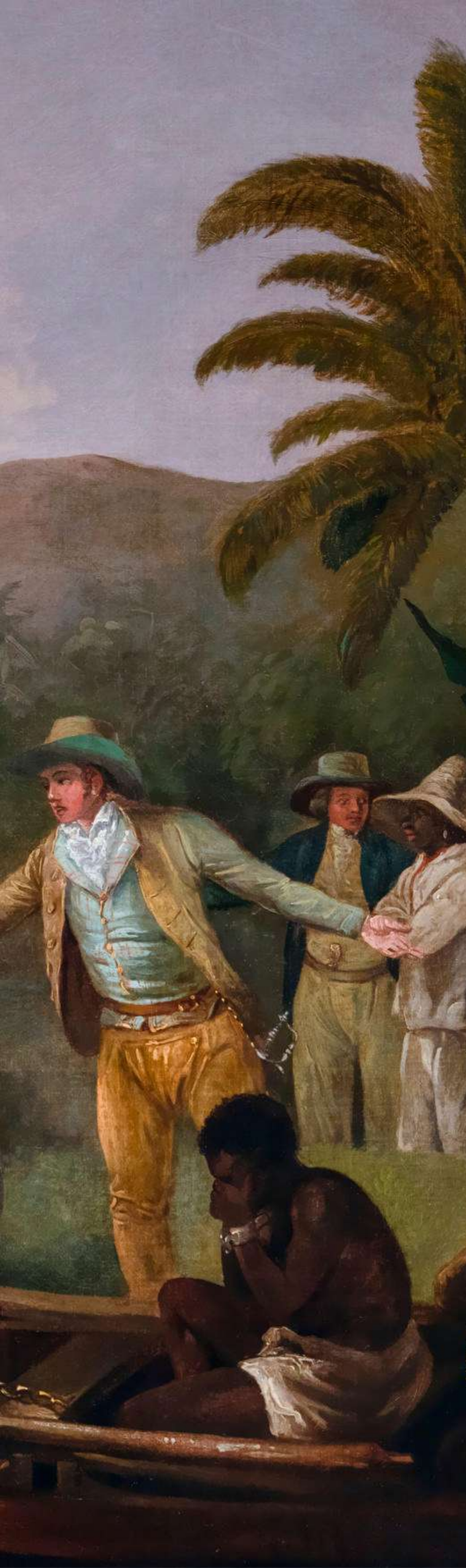
The ATLANTIC SLAVE TRADE





How millions of African people were forcibly transported across an ocean for centuries to work as slaves in European American colonies

Written by Tom Garner

Across 400 years during the 16th-19th centuries, over 12 million enslaved African people were transported across the Atlantic Ocean to labour in European American colonies. Conducted by European powers, and later the United States of America, what became known as the Atlantic Slave Trade was one of the greatest crimes against humanity.

Although slavery has existed throughout human history, the Atlantic Slave Trade was uniquely inhumane. European slavers not only stripped Africans of their freedom but forcibly transported them across a vast ocean on nightmarish voyages that were frequently fatal. If slaves survived these journeys, they were then subjected to a bleak life of servitude in a foreign land.

The slave trade vastly increased the wealth of colonial countries but at a horrendous human cost. It also changed history by dislocating vast numbers of people and permanently altering the demographics of nations across several continents. The malign influence of slavery is still felt in those countries today and its legacy is something that remains deeply contentious.

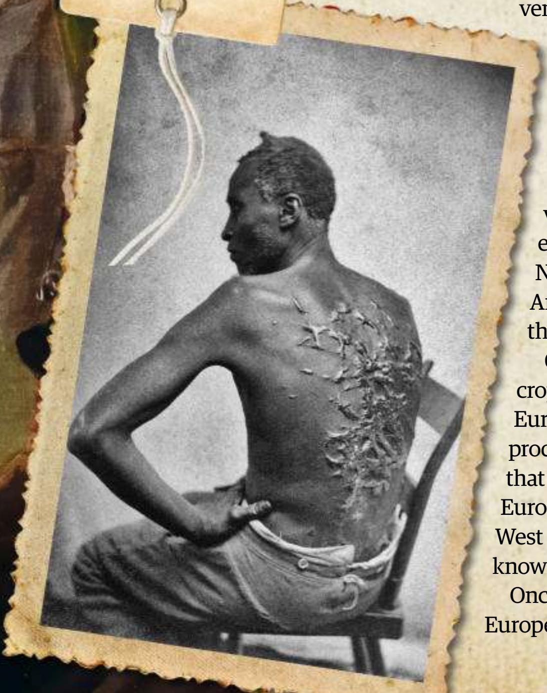
The origins of the Atlantic Slave Trade lay in the exploration of the Americas by European powers. During the late 15th and early 16th centuries, waves of explorers ventured to the seas and made the first known European contacts with the Caribbean and Central and South America.

These discoveries fuelled opportunities for commerce and conquest. Initially led by Spanish and Portuguese conquistadors, these soldiers of fortune discovered vast wealth in the Americas and quickly established colonies in what they called 'The New World'. They were soon joined in the Americas by colonists from England, France, the Netherlands and other countries.

Gold and silver were found, along with new crops such as tobacco, potatoes and maize. European markets were particularly eager for products like sugarcane, tobacco and cotton that could only be grown in the Americas. Europeans had also been exploring down the West African coast and a grim opportunity arose known as the 'Triangular Trade'.

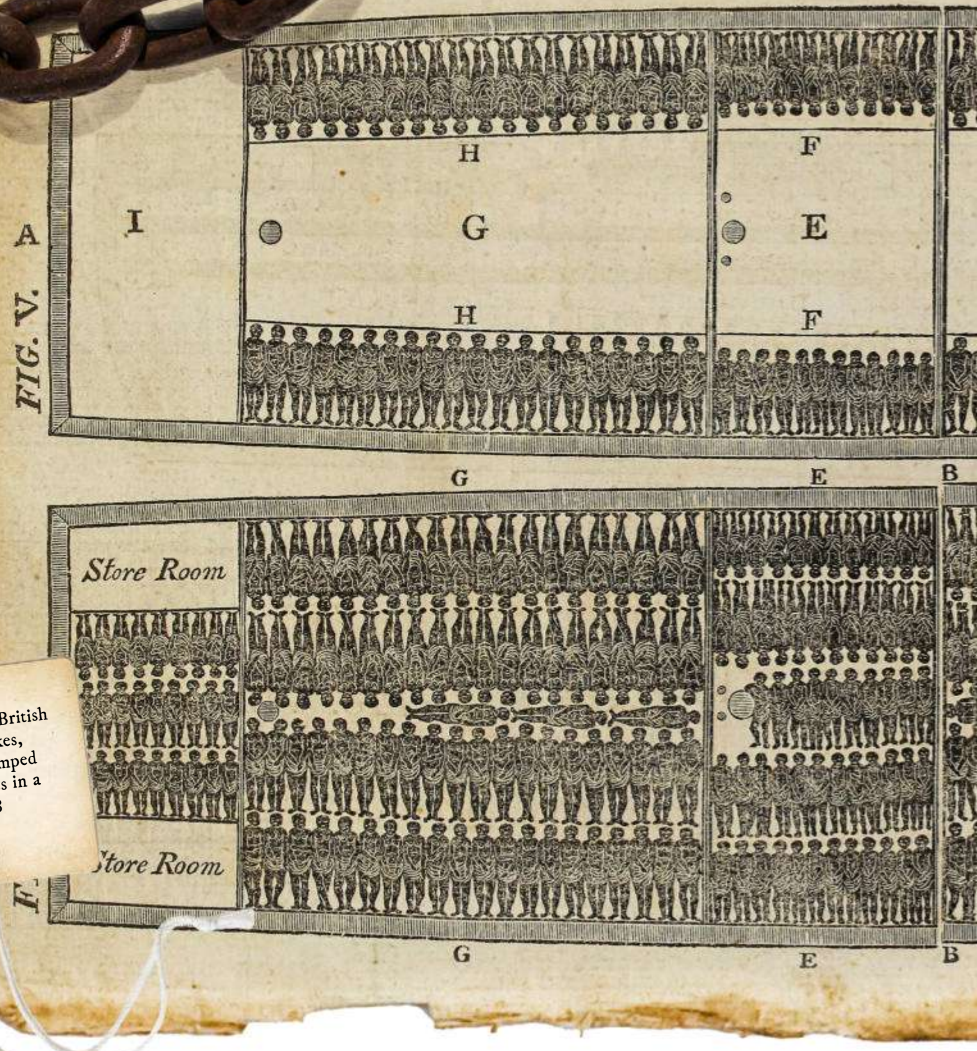
Once contact was made with African tribes, European merchants would sell goods to the

LEFT
A painting depicting an African man being taken from his family by slave traders



BELOW
This photograph from April 1862 shows a former slave in America revealing the disturbing results of being whipped during his enslavement

© Getty, Alamy



RIGHT
The plan of the British slave ship, Brookes, showing the cramped stowage of slaves in a print from 1788

local population in exchange for goods that included human slaves. These slaves were captured by European kidnappers or sold to them by fellow Africans. The vast majority of these people did not begin life as slaves, with many coming from a wide range of professions. These included farmers, soldiers, smiths and merchants.

The slaves were then transported across the Atlantic where they were sold – often in markets – for desired products such as sugar, tobacco and cotton. These were transported to Europe while the slaves worked on plantations or as domestic servants for the colonists. The Triangular Trade was extremely profitable for European merchants but devastating for the enslaved.

Transporting slaves across the Atlantic (known as the 'Middle Passage') was a notorious aspect of the trade. Millions of Africans were shipped in extremely cramped and unhygienic quarters, where they were held in appalling conditions. Men were chained together below deck while women and children were kept in separate areas, including the top deck. This left them vulnerable to physical and sexual abuse and disease epidemics were frequent. It is estimated that during the mid-18th century, approximately one in five Africans died during the passage. If conditions were improved, it was only for the benefit of the crew, not the slaves.

If Africans survived the Middle Passage, they then had to endure a brutal existence in the Americas. Families were separated at the slave market while their owners forced them to adapt to a new life. Known as 'seasoning', this involved breaking slaves' will with violence, forcing them to learn a new language and customs and forget about their old lives. Many died or committed suicide during this process.

Most slaves who survived worked on plantations in gangs under the supervision of a white overseer. During harvest time, they could work up to 18 hours per day. Men mostly worked outdoors or in workshops, while women laboured as domestic servants, nurses or midwives when they weren't in the fields.

Slaves had no legal rights and were completely at the mercy of their white masters. This left them exposed to violence, with floggings being a common punishment. Women were also vulnerable to sexual exploitation and many female slaves were raped by their owners.

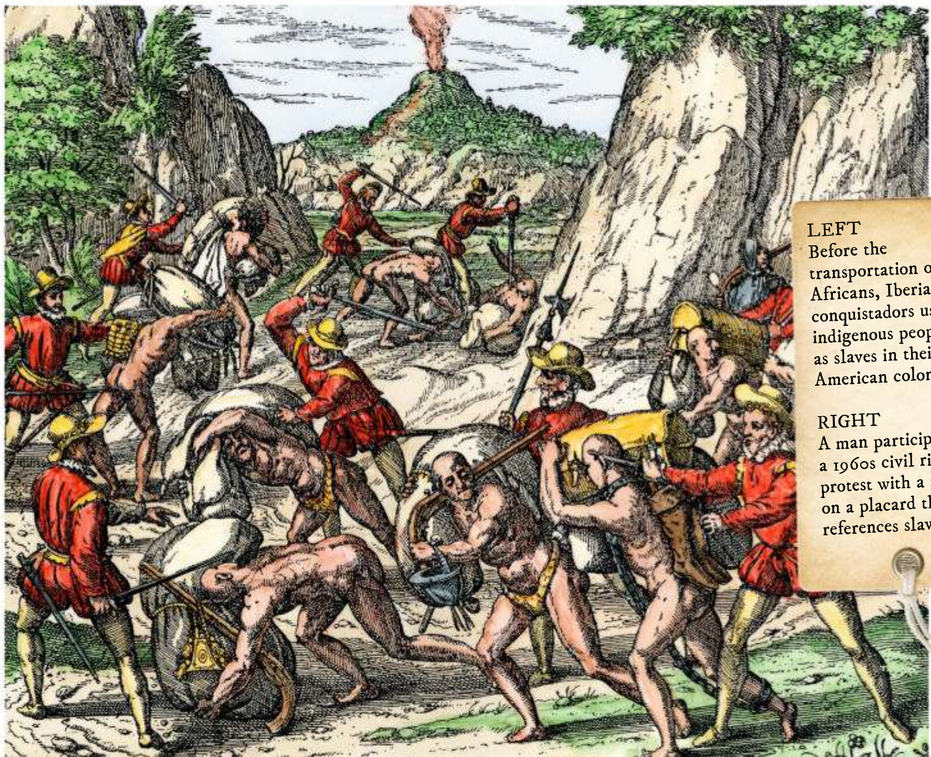
These horrendous conditions often led to slave revolts. Because their masters were heavily armed and militarily supported by European garrisons, most slave rebellions were oppressed with great brutality. However, many slaves escaped and formed communities in surrounding jungles – often with indigenous peoples. Known as 'Maroons' (French for 'feral' or 'fugitive'), they caused great problems for colonial societies, with many deploying guerrilla warfare against their former masters.

The most successful slave rebellion was the Haitian Revolution (1791-1804). This saw slaves overthrow French colonial rule on the island of Hispaniola and form the state of Haiti. Although hundreds of thousands of people were killed in the process, the revolution greatly challenged slavery in the Caribbean.

Because the slave trade was conducted by Christian European powers, there was always a tension between the huge profits generated by slavery and the moral hypocrisy it represented. This led to the rise of 'abolitionist' movements in different countries that aimed to abolish slavery.

The first American state to abolish slavery was Vermont in 1777. However, the slave trade was not universally banned across the United States and became one of the principal causes of the American Civil War (1861-65). Only after the bloodiest war in its history did the USA fully abolish slavery in 1865.

The majority of slaves in Latin America were emancipated during the Wars of Independence against Spanish rule during 1810-26. During the French Revolution, the French First Republic banned slavery in 1794, although it was reinstated by Napoleon Bonaparte in 1802. France did not



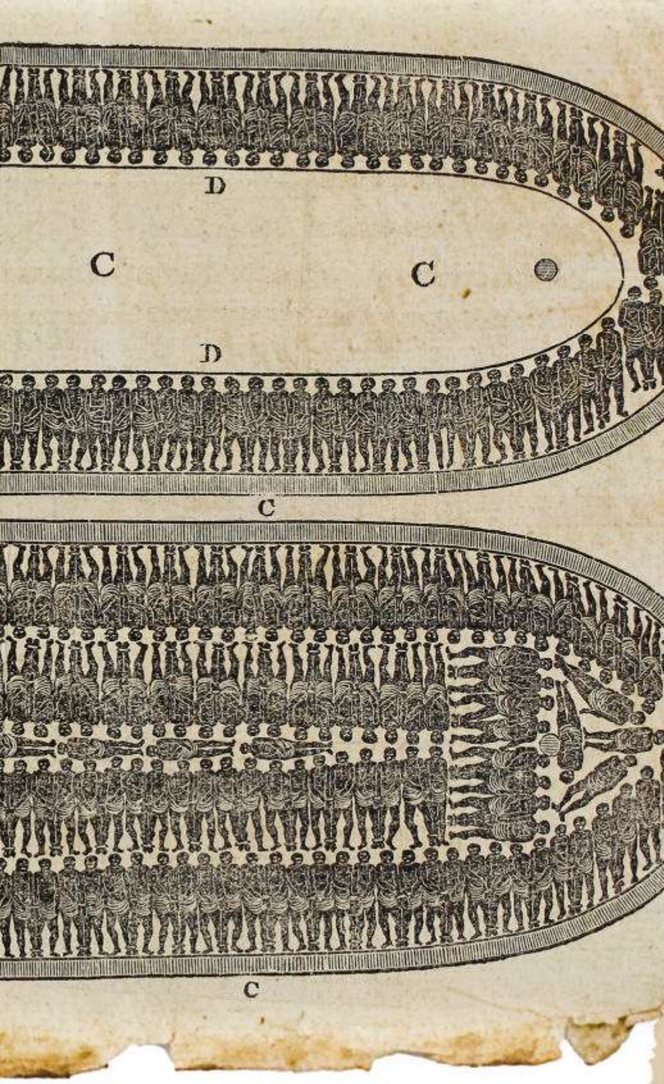
LEFT
Before the transportation of Africans, Iberian conquistadors used indigenous people as slaves in their American colonies

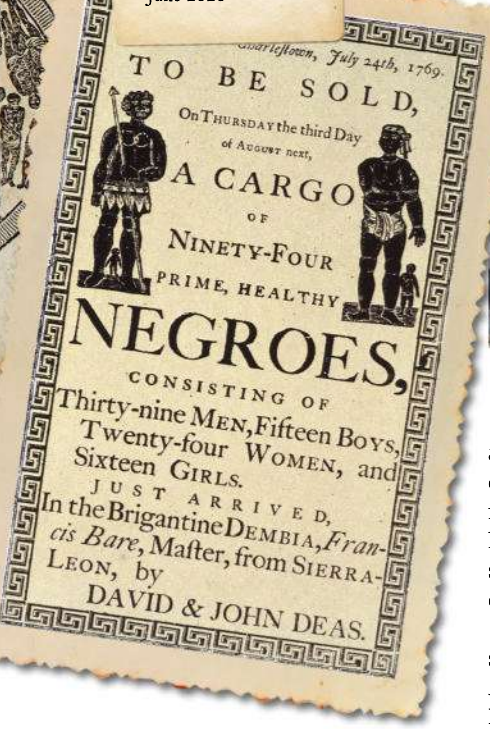
RIGHT
A man participates in a 1960s civil rights protest with a message on a placard that references slavery

RIGHT
Slaves of Confederate general, Thomas F Drayton. were photographed shortly after their liberation during the American Civil War, 2 May 1862

BELOW
A handbill advertising a slave auction in the then British colony of Charleston, South Carolina, 24 July 1769

BELOW-RIGHT
Protesters push a statue of the 17th-century slave trader, Edward Colston, into the River Avon at Bristol, on 7 June 2020





harleſtown, *July 24th*, 1769.

TO BE SOLD,

On THURSDAY the third Day
of AUGUST next,

A CARGO
OF
NINETY-FOUR
PRIME, HEALTHY
NEGROES,
CONSISTING OF
Thirty-nine MEN, Fifteen BOYS,
Twenty-four WOMEN, and
Sixteen GIRLS.
JUST ARRIVED,
In the Brigantine DEMBIA, *Francis Bare*, Maſter, from SIERRA-LEON, by
DAVID & JOHN DEAS.

fully abolish slavery until 1848 under the French Second Republic.

The most dominant imperial power, the British Empire, began steps towards abolition in the late 18th century. Britain transported approximately 40 percent of six million slaves across the Atlantic during 1700-1800 with many British cities, including Bristol, Liverpool and London, becoming extremely rich in the process.

The trade was first banned in the British colony of Upper Canada in 1793 but it took decades of parliamentary and public campaigns to fully abolish the British slave trade in 1807. Nevertheless, slavery continued within the British Empire until 1833.

Despite these efforts, the Atlantic Slave Trade continued well into the 19th century. Brazil, which was a former Portuguese colony, banned the trade in 1831 but a large, illegal, slave trade continued with Cuba until the 1860s. It was not until 1888 that Brazil formally abolished slavery – the last American country to do so.

IF WE MUST DIE LET US DIE AS FREE MEN NOT JIMCROW SLAVES

Because the Atlantic Slave Trade lasted for centuries, its legacy remains vast and complicated. The most powerful Western countries today largely owe their highly developed economies to the wealth that was first generated by slavery. By contrast, many Caribbean and West African countries – whose populations are largely the descendents of slaves – remain underdeveloped and deprived.

What's more, the slave trade also encouraged European powers to colonise the majority of Africa during the 19th century. It what is known as the 'Scramble for Africa', colonial rule left many African nations impoverished after independence in the 20th century.

Without doubt, though, one of the most toxic legacies of the slave trade is the entrenchment of racial discrimination. The trade led to the growth of substantial populations of African people in countries like Britain, France, the United States and their respective colonies. During the era of slavery, their white masters viewed them as inferior people and this way of thinking continued long after abolition took place, with former slaves and their descendents being subjected to discriminatory laws.

In the British Empire, colonial governments suppressed revolts by former slaves, such as Jamaica's Morant Bay Rebellion in 1865. The British also institutionally discriminated against Black people in many areas of public life, from the military to housing. It was not until the 1960s that the British government passed laws against racism.

In the United States, 'Jim Crow' laws violently enforced segregation and discrimination against Black people in the south of the country from the 1860s. The laws were a result of the bitter aftermath of the American Civil War and saw thousands of Black people being brazenly murdered by their white neighbours for almost a century. Such was the brutality that a prolonged civil rights movement emerged to end the Jim Crow laws, although they were not fully repealed until the 1960s.

Today, the legacy of the Atlantic Slave Trade remains contentious and emotive on both sides of the ocean. Current issues include the call for official apologies from Western governments to former colonies, along with monetary reparations for their role in the trade. Western nations also continue to grapple with the legacy of slavery in their own countries. This includes institutional discrimination and economic inequalities among their Black communities, as well as the emergence of revisionist histories concerning the slave trade.

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SLAVE TRADE FACTS

Revealing some of the shocking statistics behind the horrors of the slave trade

80 Days

the length of the journey from **Africa** to the **New World**

UP TO **16%** of **slaves died** during **the Middle Passage**

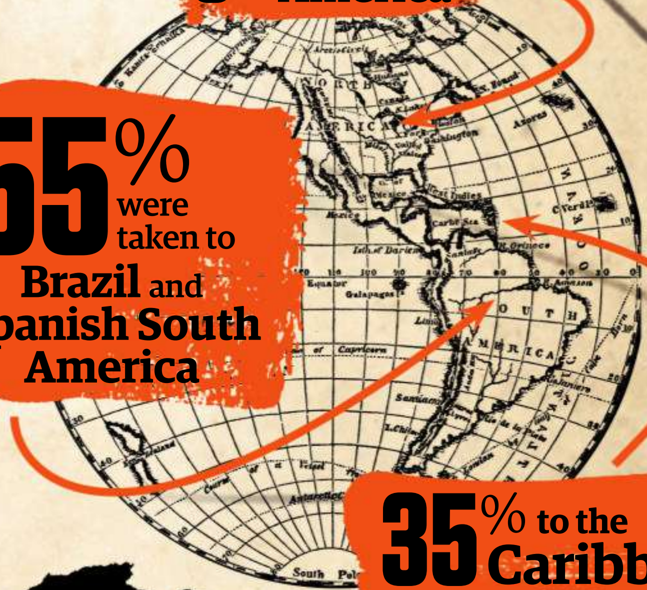
SLAVE SHIP'S HUMAN CARGO

48% men

26% woman

26% children

36,000 slaving expeditions between 1514-1866



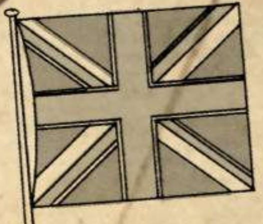
6% to North America

55% were taken to **Brazil** and **Spanish South America**

35% to the **Caribbean**

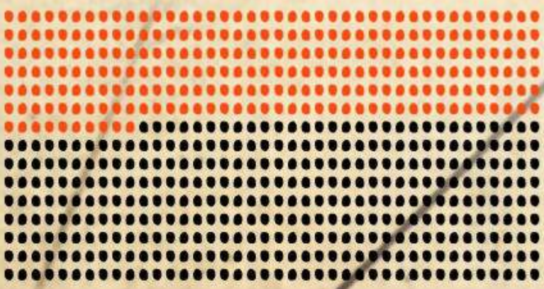
12.5+ million enslaved Africans were transported across the Atlantic

Over **4,000** miles



3.1-3.4 million enslaved people transported by **BRITISH SHIPS**

250-600



SLAVES PER BOAT

$40,000

average cost of a slave

in the American South in today's money

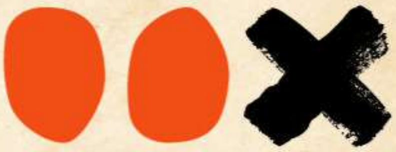
Black population in early America/United States

27,817 in 1700

757,208 in 1790

4,441,830 in 1860

3.9 million of whom were slaves



1/3 of newly arrived slaves would die within three years

1/2

of all enslaved children died in their first year of life

Mortality rates were **twice as high among enslaved children as among Southern white children**

£20 million

(*£17 billion in today's money)

compensation paid to British slave owners

following abolition in 1833

£0

compensation paid to the enslaved or their descendants since abolition

2015

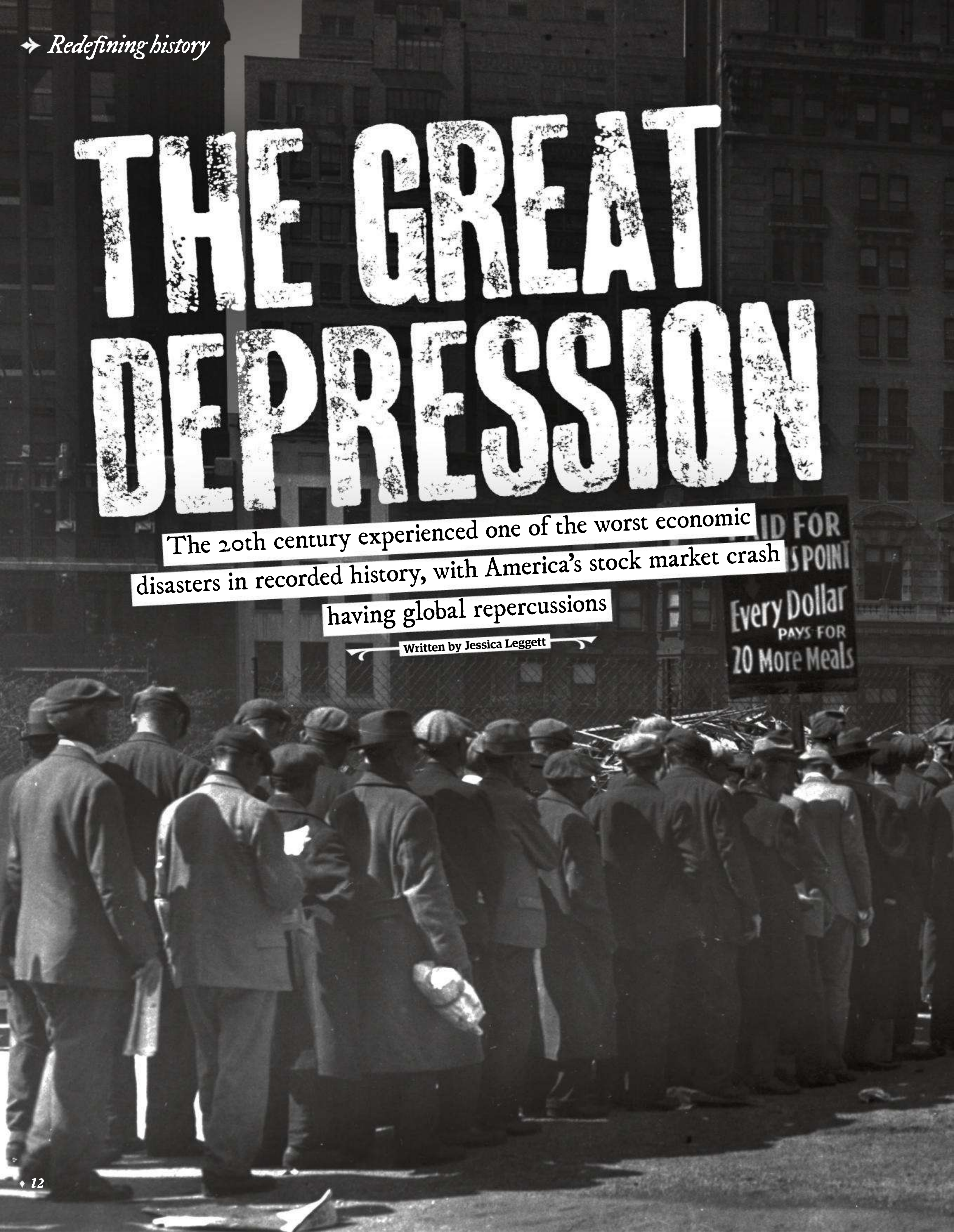
The year **British taxpayers paid off the last instalment of the bank loan used to compensate slave owners**

Images: Getty Images, Alamy (coffin)

THE GREAT DEPRESSION

The 20th century experienced one of the worst economic disasters in recorded history, with America's stock market crash having global repercussions

Written by Jessica Leggett

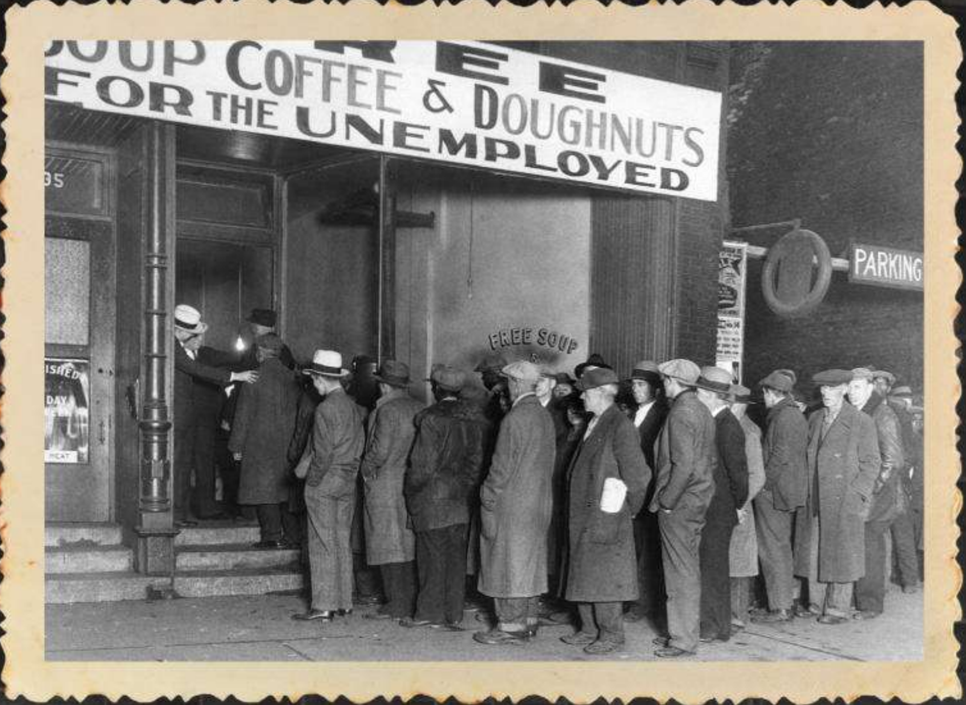


ID FOR
S POINT
Every Dollar
PAYS FOR
20 More Meals

When thinking about dark periods in history, the Great Depression will come to many people's minds. It was one of the most significant moments of the 20th century, defining over a decade of world history and causing a lasting impact not just on the world's major economies, but the political landscape of the 1930s.

The Great Depression was an economic collapse that began in 1929 and went on to dominate the 1930s, eventually ending around 1939, the year that World War II began. Although it initially started in the United States, the Great Depression spread throughout the rest of the world, impacting the global economy for decades. Before this extraordinary economic collapse, the American economy had been thriving. While European countries had been grappling with recession following the end of World War I, just two years later, the 'Roaring Twenties' were in full swing and the United States was experiencing a period of economic prosperity with increased industrial production and rising wages. So, what caused all of this to come crashing down?

There are lots of different factors that contributed to the Great Depression. Firstly, the economic boom of the 1920s encouraged many people to seek out quick and easy ways to make money. Millions of Americans – from professional investors to ordinary people – began investing in the stock market, believing that it was a good way to get rich. This influx of money caused prices to quickly rise, which made the economy look even more prosperous. However, many people financed their purchasing of stock by borrowing money, for example taking out loans or remortgaging their homes. Even experienced investors were putting down just a fraction of the share price and funding the rest by borrowing money, all while using their stock as collateral.



F. SCHUMACHER & CO.

ABOVE
Notorious gangster Al Capone opened a soup kitchen in order to help feed the unemployed

LEFT
A breadline of unemployed people in New York City

BELOW
The 'Roaring Twenties' was an era of prosperity and glamour

© Getty

CAUTION
SPEED LIMIT 8 MILES PER HOUR
AXLE LOAD RESTRICTED TO 10 TONS

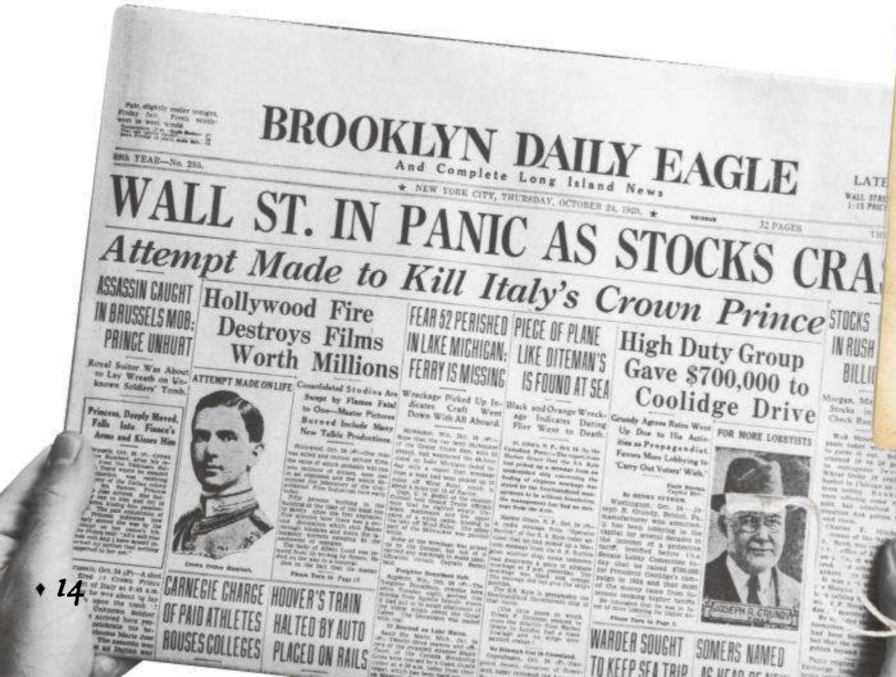
This increasing availability of credit also fuelled a rise in consumer culture and thereby increased demand for the production of goods, which left businesses exposed when this demand inevitably changed. The increase in borrowing was also encouraged by the low interest rates available, caused by a huge increase in the money supply by the Federal Reserve – the central banking system of the US, whose purpose is to maintain economic stability – in the 1920s. Consequently, people were borrowing and investing well beyond their means, leading to a bubble of over-speculation that was ready to burst.

By September 1929, the Dow Jones Industrial Average had reached a peak of 381 points, up from 63 in August 1921. At this point, the Federal Reserve had already started to restrict the flow of money and increase interest rates to try and get the market under control, which initially worked. But as share prices began to rapidly decline, investors became nervous and sold their shares as they feared a crash, with over 12 million shares being sold on 24 October, a day that became known as 'Black Thursday'. As panic firmly set in, five days later on 29 October, better known as 'Black Tuesday', 16 million shares were sold and investors found their stocks completely wiped out and worthless. The stock market collapse caused widespread panic and resulted in people rushing to their banks to withdraw their money.

This, however, ultimately exacerbated the situation and would worsen the Great Depression, with bank runs occurring between 1929 and 1933 leading to the closure of lots of banks. By 1933, the banking system in the United States had collapsed, with President Franklin Roosevelt announcing a banking holiday. Unsurprisingly, the economic turmoil and the uncertainty around when it would improve shattered the confidence of both investors and consumers. Following the crash, and compounded by the banking panics, neither wanted to spend. This caused a decline in demand and therefore a decline in production, which further harmed the economy. At the same time, a decline in international trade during the Great Depression affected several countries' economies, as governments made efforts to protect their trade and raise tariffs; decisions that made the economic situation worse.

The collapse of the banks, coupled with reduced investment and consumer spending, led to deflation. With falling prices and demand, many businesses were either forced to cut down industrial production or close entirely, as they could not afford to borrow the money they needed to stay afloat. This caused unemployment to drastically rise, with six million people looking for work by 1931. With millions of Americans losing their jobs, they subsequently fell into debt, poverty and homelessness, often unable to afford even basic necessities.

If all of this wasn't bad enough, the southern plains of the United States experienced several dust storms throughout the 1930s, a series of



89th YEAR—No. 295.

BROOKLYN DAILY EAGLE

And Complete Long Island News

★ NEW YORK CITY, THURSDAY, OCTOBER 24, 1929. ★

32 PAGES

WALL ST. IN PANIC AS STOCKS CRA

Attempt Made to Kill Italy's Crown Prince

ASSASSIN CAUGHT IN BRUSSELS MOB: PRINCE UNHURT

Royal Suitor Was About to Lay Wreath on Unknown Soldiers' Tomb.

Princess, Deeply Moved, Falls Into Fiance's Arms and Kisses Him

ATTEMPT MADE ON LIFE

Crown Prince Humbert.

Hollywood Fire Destroys Films Worth Millions

Consolidated Studios Are Swept by Flames Fatal to One—Master Pictures Burned Include Many New Talkie Productions.

FEAR 52 PERISHED IN LAKE MICHIGAN: FERRY IS MISSING

Wreckage Picked Up Indicates Craft Went Down With All Aboard.

PIECE OF PLANE LIKE DITEMAN'S IS FOUND AT SEA

Black and Orange Wreckage Indicates Daring Flier Went to Death.

High Duty Group Gave $700,000 to Coolidge Drive

Grundy Agrees Rates Went Up Due to His Activities as Propagandist. Favors More Lobbying to 'Carry Out Voters' Wish.'

FOR MORE LOBBYISTS

JOSEPH R. GRUNDY

STOCKS IN RUSH BILLI

CARNEGIE CHARGE OF PAID ATHLETES ROUSES COLLEGES

HOOVER'S TRAIN HALTED BY AUTO PLACED ON RAILS

WARDER SOUGHT TO KEEP SEA TRIP

SOMERS NAMED

ABOVE
Crowds of people descend on Wall Street on Black Tuesday, 29 October 1929

ABOVE-LEFT
Franklin D Roosevelt signing the Emergency Banking Act in 1933

LEFT
The front page of the *Brooklyn Daily Eagle* on Black Thursday

catastrophes that became known as the Dust Bowl. Triggered by severe and extended droughts, high temperatures and poor agricultural practices that led to wind erosion, the Dust Bowl symbolised the hardships Americans faced. Many migrated towards the West in search of work but were faced with unemployment and prejudice that they would sponge off the government and make conditions worse for those already living in the western states.

Clearly, the Great Depression had a significant impact in many ways. The increased levels of inequality, poverty and homelessness led to the development of social welfare programmes and contributed to the rise in labour movements. Workers began to organise themselves and demand fair wages and job security, pressures which led to the development of workers' rights. The Depression also led to the questioning of self-regulating markets and the policy of laissez-faire in the United States, which had led to insufficient regulation of the markets, with initial responses to the Depression, such as the Federal Reserve restricting the money supply, ultimately making things worse. Financial regulations were established to try and prevent the reoccurrence of such a catastrophic and widespread crash, with one important piece of legislation – the Glass-Steagall Act – signed into law by Roosevelt in 1933. The most important aspect of this act, which was intensely debated prior to its ratification, was to separate commercial banking from investment banking, effectively aiming to create a break between the related industries.

Not only did the Depression affect the lives of millions of Americans, but it also spread beyond the borders of the United States, affecting countries in Europe such as France, Great Britain, and Germany. The Wall Street crash demonstrated how interconnected the different economies in the world had become, influencing the development of future international economic policy. Great Britain, for example, had been responsible for underwriting the global financial system but was forced to drop the gold standard in 1931 as the waves were felt across the Atlantic. With global economies struggling, between 12 June and 27 July 1933, the London Economic Conference took place with representatives from 66 nations in an attempt to agree on measures to deal with the Depression, as well as to stabilise exchange rates. However, the Conference received a fatal blow three weeks in, when President Roosevelt announced that the United States would not be taking part in efforts to stabilise the exchange rates immediately – and so the Conference failed to achieve its goals.

Aside from the social and economic changes, the Great Depression also had global political consequences. As it grappled with the longest downturn in its economic history, the United States was forced to take a step back from the international stage, leading to increased isolationism. Meanwhile, European countries struggled to recover their economies, which led to political instability and gave rise to extremist ideologies. Fascism gained ground in countries such as Japan, Italy, and of course, Germany, where the rise of Hitler and his election as chancellor in 1933 owed much to concerns over the rising unemployment and poor economic performance of Germany at the time. This was a moment that changed world history and was a key turning point that would eventually lead to WWII.

ABOVE-RIGHT
Italian dictator Benito Mussolini, whose rise to power was aided by the economic uncertainty of the 1930s

ABOVE-LEFT
Delegates at the London Economic Conference in 1933

RIGHT
Hitler played on the Germans' concerns over rising unemployment in his speeches

© Getty

The Holocaust

Conducted across continental Europe during the 1930s and 1940s, the Holocaust saw the murder of tens of millions of people by the Nazis

Written by Tom Garner

Known as the Shoah in Hebrew, the Holocaust was an attempt by the Nazis and their collaborators to murder the entire Jewish population of Europe. The resulting genocide led to the deaths of approximately six million Jews. An additional 11 million were also murdered from other persecuted groups.

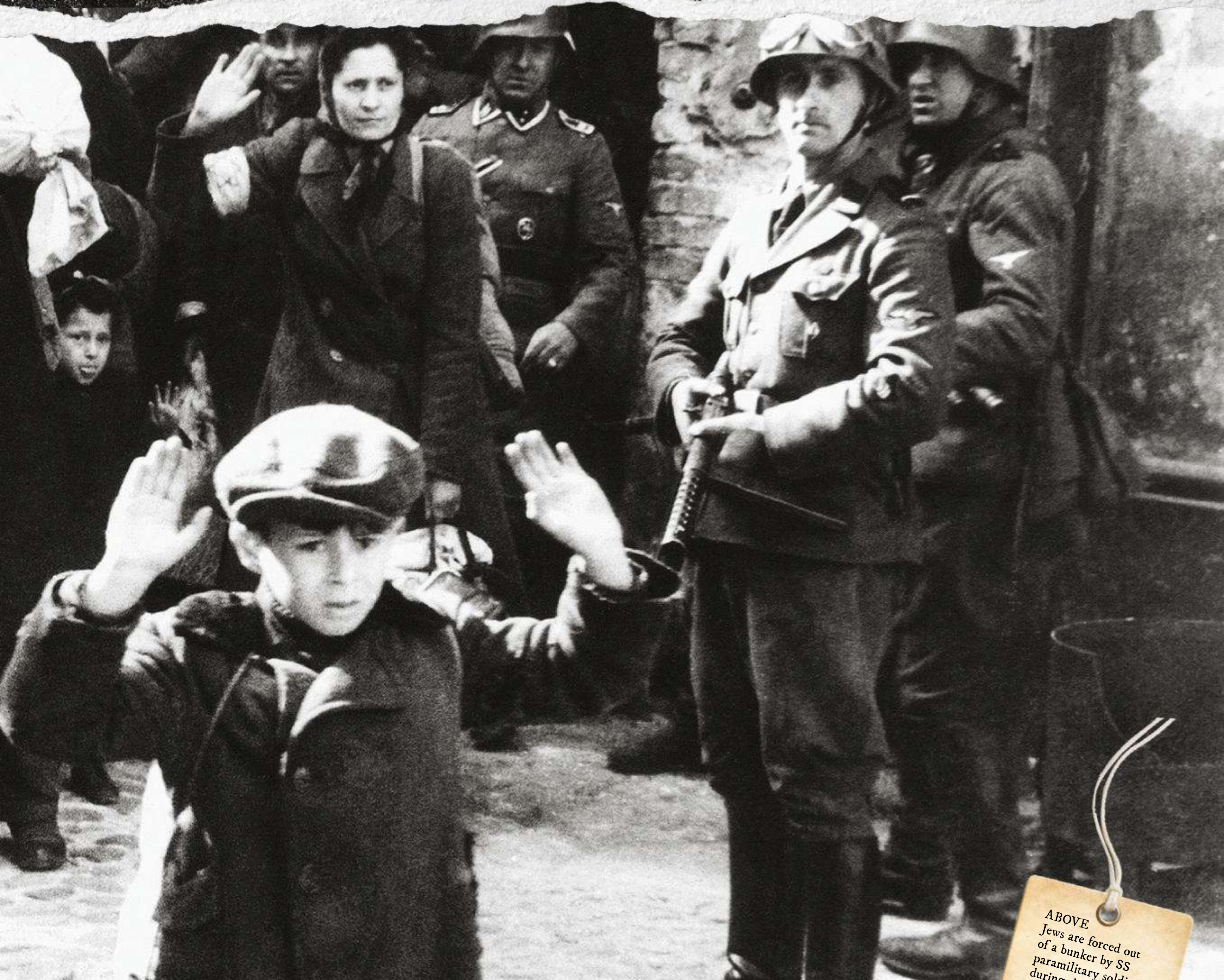
The Nazis enforced this horrendous policy based on prejudices involving ethnicity, religion, politics, sexual orientation and even health. The Holocaust was unique in its horrific nature and is recognised as the ultimate symbol of humanity's capacity for evil.

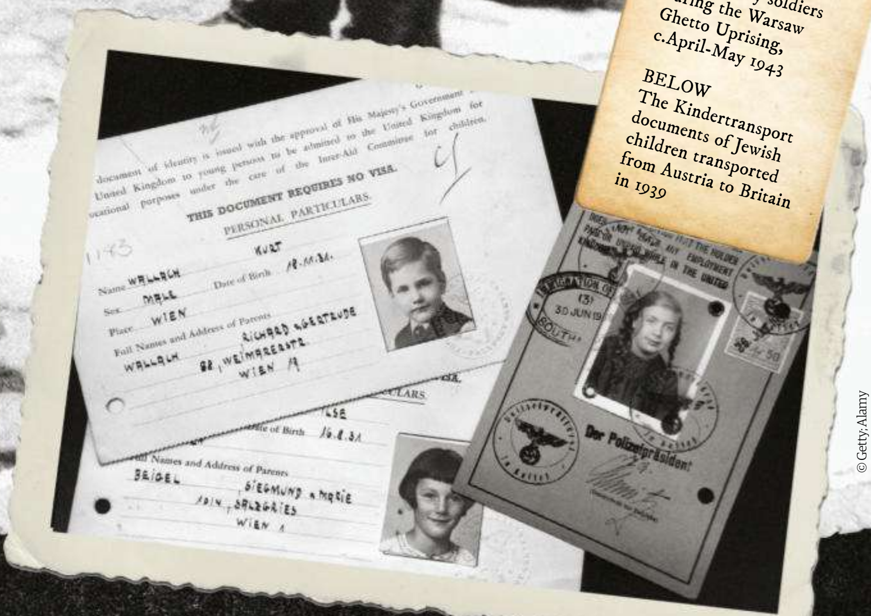
The origins of the Holocaust were rooted in thousands of years of discrimination against the Jews, coupled with the rapid rise of the Nazi Party in Germany. Although Jews had lived in Europe for almost 2,000 years before the 20th century, relationships with their mostly Christian neighbours were often deeply troubled.

Antisemitism (prejudice against Jewish people) grew from the Christian belief that the Jews were responsible for killing Jesus Christ. This hostile theology fuelled persecution, from Crusades-era massacres to violent riots (known as 'pogroms') against Jewish communities in the Russian Empire during the 19th and 20th centuries.

Nevertheless, many Jews thrived across Europe (including in Germany) as successful businessmen and intellectuals. Their relative prosperity fuelled additional antisemitism that was often based on material jealousy and a mistaken belief that Jews were political manipulators bent on overthrowing nominally Christian regimes.

In Germany, antisemitism was already pretty widespread but overt persecution of the Jews did not begin until the leader of the far-right Nazi Party, Adolf Hitler, was elected as chancellor in 1933. Hitler and his associates blamed Germany's recent defeat during WWI on a conspiracy between communists and Jews. This conspiracy was false but





document of identity is issued with the approval of His Majesty's Government
United Kingdom to young persons to be admitted to the United Kingdom for
educational purposes under the care of the Inter-Aid Committee for children.

THIS DOCUMENT REQUIRES NO VISA.

PERSONAL PARTICULARS.

1143

Name WALLACH KURT Date of Birth 18.11.31.

Sex MALE

Place WIEN

Full Names and Address of Parents

WALLACH RICHARD & GERTRUDE

82, WEIMARERSTR.

WIEN 19

ILSE

Date of Birth 16.8.31

Full Names and Address of Parents

BEIGEL SIEGMUND & MARIE

XDIN, SALZGRIES

WIEN 1

30 JUN 19

SOUTH

Der Polizeipräsident

ABOVE
Jews are forced out of a bunker by SS paramilitary soldiers during the Warsaw Ghetto Uprising, c.April-May 1943

BELOW
The Kindertransport documents of Jewish children transported from Austria to Britain in 1939

© Getty; Alamy

LEFT
A British soldier talks to a survivor of Bergen-Belsen concentration camp shortly after its liberation in April 1945

BELOW Reinhard Heydrich was a high-ranking SS official in the Nazi Party who is considered to be one of the chief architects of the Holocaust

the Nazis used it to push their extremist ideas on eugenics and 'race theory'. This aimed to prove that Jews were racially inferior to 'Aryans'. These were defined as primarily Germanic and Northern European people, known by the Nazis as the 'Master Race'.

The Nazis were also expansionist and wanted to create Lebensraum ('Living Space') for Aryans in Eastern Europe. Non-Aryans who already lived in these territories, such as Jews or Slavs, would simply be displaced. Once the Nazis came to power, these nightmarish policies began to be swiftly implemented.

In fact, it was only two months after the Nazis came to power that they established their first concentration camp at Dachau in Bavaria. It initially held political opponents, such as communists and trade unionists, but it wasn't long before Jews were also imprisoned there.

In September 1935, the Nazis introduced the Nuremberg Laws. These officially began the persecution of Jews in Germany. Jewish political and civil rights were removed and a significant turning point occurred on 9 November 1938, when the Nazis authorised pogroms against Jews across Germany. Known as Kristallnacht (Night of the Broken Glass), this event saw almost 100 Jews murdered in violent riots, 267 synagogues and Jewish businesses destroyed and an additional 30,000 Jews being arrested and imprisoned in newly established concentration camps.

Kristallnacht is generally considered the beginning of the Holocaust and it prompted many Jews to leave Germany as well as Nazi-annexed Austria and Czechoslovakia. This included thousands of Jewish children who were evacuated to countries like Britain in rescue convoys known as the Kindertransport.

The Nazis invaded Poland in September 1939, which then prompted the outbreak of WWII. The ensuing war dramatically increased the scope and horror of the Holocaust because the Nazis defeated and occupied countries across Europe. This included France, the Low Countries, Norway, Denmark and Greece.

Across occupied Europe, the Nazis forcibly moved Jews into crowded ghettos. Jews were forced to wear a yellow Star of David badge for identification and were deprived of food and utilities. Conditions were appalling, with the largest ghetto in Warsaw containing 400,000 Jews within just 2.5 square kilometres (1.3 square miles). There was an average of 7.2 people per room.

In June 1941, Hitler ordered the invasion of the Soviet Union with the Nazis now overseeing the killing of Jews on an industrial scale. The Eastern Front provided an opportunity for mobile paramilitary SS death squads (known as the Einsatzgruppen) to round up Jews and murder them in mass shootings in countries like Russia, Belarus, Ukraine and the Baltic States. The most infamous atrocity occurred outside Kyiv at Babi Yar in September 1941 when 33,000 Jews were killed. Babi Yar was also the site of killings (roughly 100,000) of other groups, such as Soviet POWs, Roma people and civilians.

The Einsatzgruppen ultimately killed over one million Jews, including 200,000 in Lithuania alone. However, they did not act in isolation because throughout occupied Europe, the Nazis found willing collaborators to assist in the killings. This included antisemitic nationalists such as the Arrow Cross Party in Hungary and paramilitary groups with similar aims elsewhere.

As the war progressed, the SS began experimenting with poison gas as a way to murder Jews and other people more 'efficiently'. The Einsatzgruppen began travelling in mobile 'gas vans', using carbon monoxide to kill people in Eastern Europe.

Taking inspiration from this method, high-ranking Nazis discussed the 'Final Solution of the Jewish Question' at the Wannsee Conference in Berlin, January 1942. These officials, led by Reinhard Heydrich, compiled a list of Jews in Europe (numbering 11 million) with the aim of exterminating them. It was decided that Jews would be removed from their ghettos to six death camps in Poland, where they would be killed en masse in gas chambers using the cyanide-based Zyklon B pesticide.

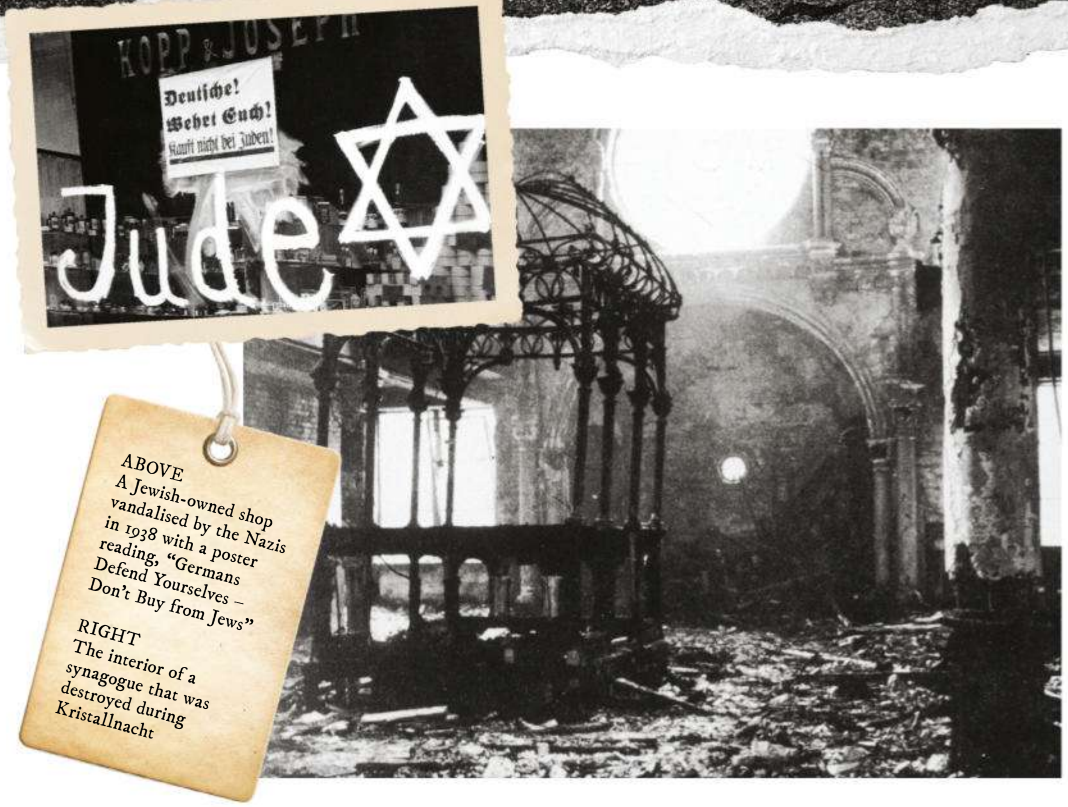
The death camps were different to concentration camps in that they were exclusively designed to murder people. Their names have since become bywords for unspeakable evil: Belzec, Chełmo, Majdanek, Sobibor, Treblinka and – most notoriously – Auschwitz-Birkenau.

Auschwitz was the most infamous death camp. During 1940-45, it is estimated that 1.1 million

> "The death camps were different to concentration camps in that they were exclusively designed to murder people. Their names have since become bywords for unspeakable evil"

people were murdered there, with 90 percent of the victims being Jews. Such is its notoriety that the internationally commemorated Holocaust Memorial Day is held annually on 27 January, the day Soviet troops liberated the camp. It should be noted that although Jews were the main target group murdered during the Holocaust, the genocide conducted by the Nazis included a wide range of other victims. Slavic people (including Poles, Russians and Ukrainians) were deemed inferior to Aryans with the Nazis killing 3.3 million combined Soviet POWs, 1.8 million Poles and 310,000 Serbs. Roma and Sinti peoples (then collectively known as 'Gypsies') were placed in the same racial category as Jews with at least 250,000 being killed.

The Nazis first used poison gas on disabled people and they murdered 270,000 during 1939-45. Homosexual men were persecuted, with 10,000-15,000 dying in concentration camps. The Holocaust also had political victims. These included communists, captured resistance fighters, Italian partisans, freemasons and even Spanish Republicans who had escaped from Fascist Spain.



ABOVE
A Jewish-owned shop vandalised by the Nazis in 1938 with a poster reading, "Germans Defend Yourselves – Don't Buy from Jews"

RIGHT
The interior of a synagogue that was destroyed during Kristallnacht

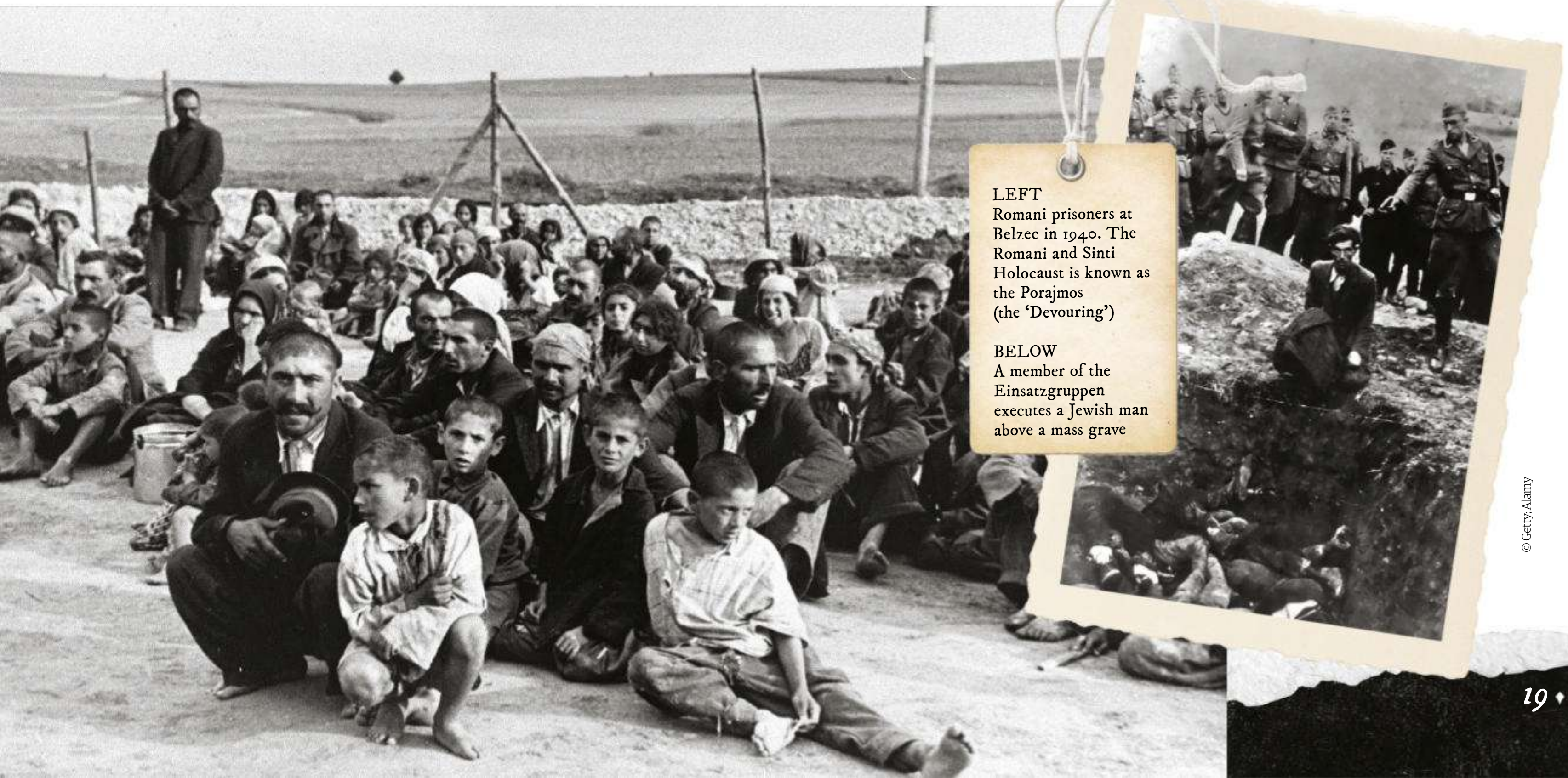
By 1944, the Nazis were losing the war in Europe. As Allied forces advanced towards Germany from both east and west, camps began to be liberated, with the first being Majdanek in July 1944.

As more camps were liberated, the Nazis attempted to cover up their crimes by destroying camps and mass graves. Many camp survivors were forced onto 'death marches' into Germany, which killed thousands. When the camps were liberated, Allied soldiers were horrified. They discovered many unburied bodies, widespread disease and malnourished survivors who often died shortly after liberation.

After the war ended, survivors attempted to rebuild their lives, with many emigrating to Allied countries. Meanwhile, the Holocaust prompted a revolution in the prosecution of war crimes. The Nuremberg Trials of 1945-46 saw 199 Nazi leaders and accomplices charged with crimes against humanity. There were 161 convictions, with 37 sentenced to death. The trials are now considered the foundation of modern international criminal law. Even in the 2020s, those who implemented the Holocaust - such as camp guards and staff - continue to be traced, arrested and put on trial.

One of the most significant consequences of the Holocaust was the acceleration of the foundation of Israel in 1948. In the short-term, this was partially due to the large migration of Holocaust survivors to Palestine after the war. However, the establishment of the world's only Jewish state led to bitter and almost continual conflict with Palestinians, which continues to this day.

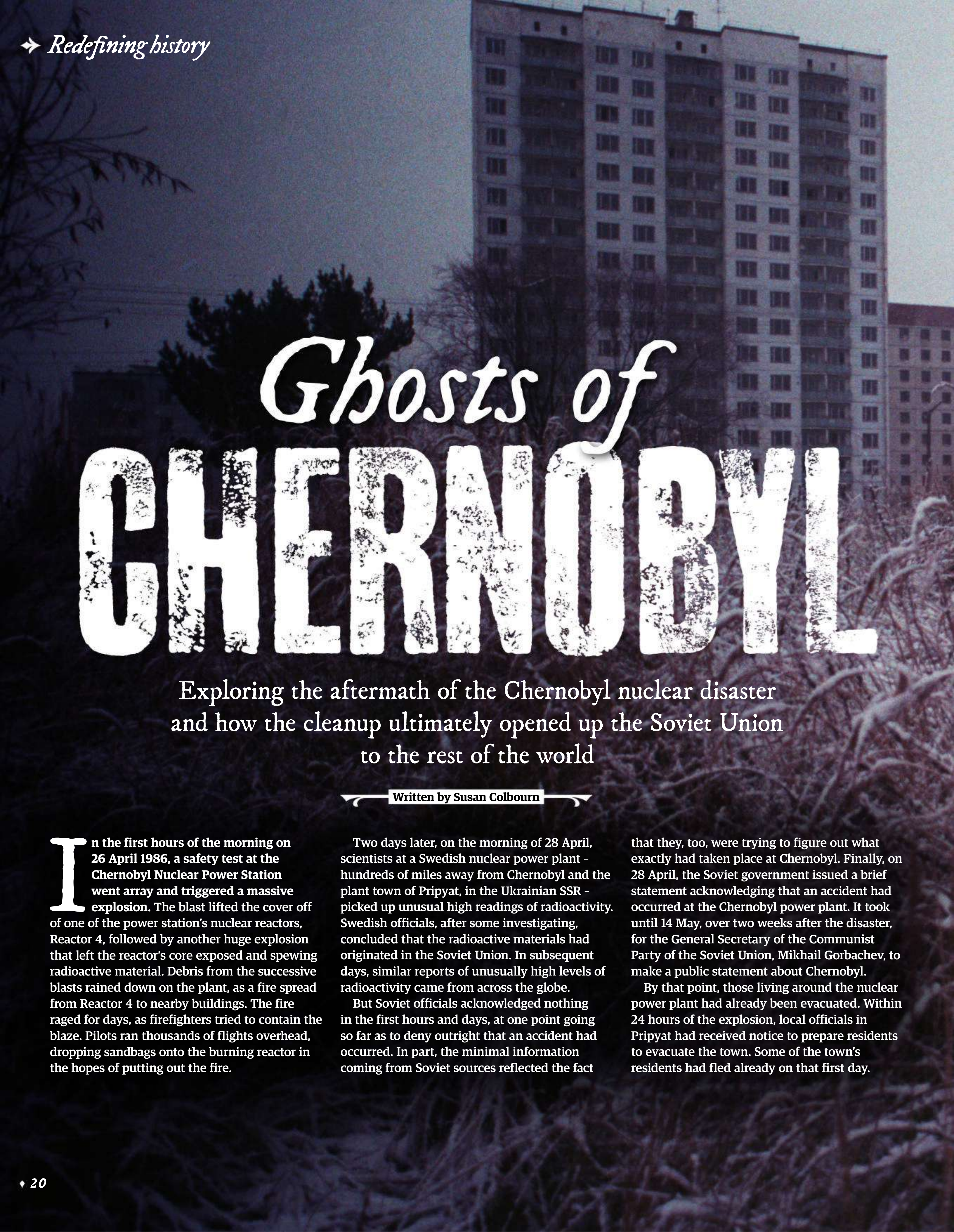
With the death of approximately six million Jews, the Holocaust destroyed centuries of Jewish communities and culture in Europe. Its memory has largely energised the international community to remain vigilant about preventing genocide and its causes. However, the Holocaust will always be remembered as a dire warning from history, one that profoundly shapes the world we live in today.



LEFT
Romani prisoners at Belzec in 1940. The Romani and Sinti Holocaust is known as the Porajmos (the 'Devouring')

BELOW
A member of the Einsatzgruppen executes a Jewish man above a mass grave

© Getty, Alamy



Ghosts of CHERNOBYL

Exploring the aftermath of the Chernobyl nuclear disaster and how the cleanup ultimately opened up the Soviet Union to the rest of the world

Written by Susan Colbourn

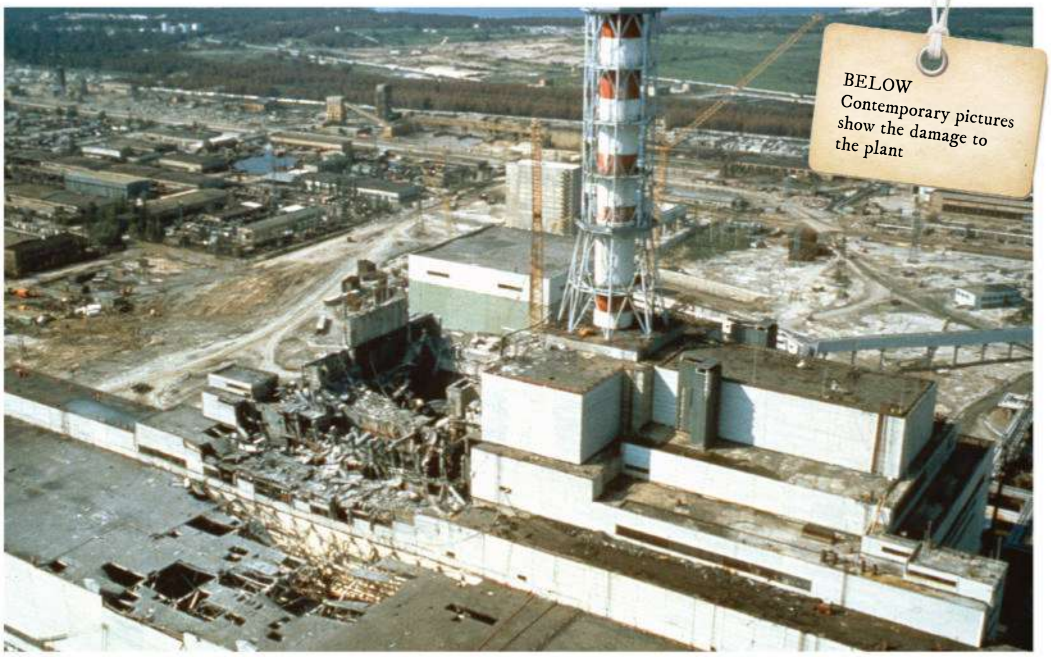
In the first hours of the morning on 26 April 1986, a safety test at the Chernobyl Nuclear Power Station went array and triggered a massive explosion. The blast lifted the cover off of one of the power station's nuclear reactors, Reactor 4, followed by another huge explosion that left the reactor's core exposed and spewing radioactive material. Debris from the successive blasts rained down on the plant, as a fire spread from Reactor 4 to nearby buildings. The fire raged for days, as firefighters tried to contain the blaze. Pilots ran thousands of flights overhead, dropping sandbags onto the burning reactor in the hopes of putting out the fire.

Two days later, on the morning of 28 April, scientists at a Swedish nuclear power plant - hundreds of miles away from Chernobyl and the plant town of Pripyat, in the Ukrainian SSR - picked up unusual high readings of radioactivity. Swedish officials, after some investigating, concluded that the radioactive materials had originated in the Soviet Union. In subsequent days, similar reports of unusually high levels of radioactivity came from across the globe.

But Soviet officials acknowledged nothing in the first hours and days, at one point going so far as to deny outright that an accident had occurred. In part, the minimal information coming from Soviet sources reflected the fact that they, too, were trying to figure out what exactly had taken place at Chernobyl. Finally, on 28 April, the Soviet government issued a brief statement acknowledging that an accident had occurred at the Chernobyl power plant. It took until 14 May, over two weeks after the disaster, for the General Secretary of the Communist Party of the Soviet Union, Mikhail Gorbachev, to make a public statement about Chernobyl.

By that point, those living around the nuclear power plant had already been evacuated. Within 24 hours of the explosion, local officials in Pripyat had received notice to prepare residents to evacuate the town. Some of the town's residents had fled already on that first day.

ПРИПЯТЬ



BELOW
Contemporary pictures show the damage to the plant

> “Soviet pilots chased the clouds and peppered them with silver iodide to make it rain”

Chernobyl’s impacts were vast and wide-ranging, though the sheer degree of devastation continues to be hotly contested decades later.

The catastrophe did immediate damage as it contaminated portions of the western Soviet Union, concentrated in what became Russia, Ukraine and Belarus after the Soviet Union’s collapse in December of 1991. Estimates from the United Nations put the number of individuals affected by the nuclear accident at the Chernobyl power station at some 8.4 million across Russia, Ukraine and Belarus alone. Some 600,000 people were involved in - and impacted - by efforts to clean up the nuclear power plant.

Around Chernobyl, trees in the nearby forest turned a sickly reddish-brown as a result of high radiation, in what became known as the ‘Red Forest’. The crew that cleaned up the accident ended up exposed to high degrees of radiation; 28 of the plant’s workers died within months of the explosion, while another 106 suffered from acute radiation sickness thanks to high radiation exposure during the clean-up process.

Food supplies, too, were contaminated as radioactive isotopes fell on crops, farms and grazing areas for livestock. A slew of new regulations and orders tried to grapple with the enormity of the problem. Soviet officials introduced new mechanisms to monitor contamination, distributing new advice to farmers across the contaminated areas. Often, these attempted solutions merely hid the problem. One group of KGB officers, for instance, found four train cars of radioactive meat in 1990. For the past four years, the contaminated meat had criss-crossed railroads, trying in vain to find any takers willing to accept it.

The devastating effects of the accident were hardly contained in and around Chernobyl or kept within the confines of the exclusion zone set up by Soviet authorities. Radioactive particles travelled far and wide, carried by weather systems and wind patterns. After all, it was precisely these weather patterns that made it possible for Swedish scientists to figure out — and inform those around the globe — that a nuclear accident had taken place in the Soviet Union.

In the days after the explosion, Soviet officials tracked the radioactive clouds emanating out of the explosion. A large accumulation, over Belarus, was headed toward Moscow where meteorologists anticipated a sizeable spring storm in the days to come. Rather than see it rain radioactive droplets over Moscow, Soviet pilots chased the clouds and peppered them with silver iodide to make it rain. Seeding the clouds brought down a heavy, radioactive rain across swaths of Belarus in order to spare the Soviet capital from those same rains.

Spikes in radioactivity could be found, too, in the United Kingdom. Scientists tested sheep, only to discover that the animals possessed radioactive isotope levels far too high for human consumption. Again, it was the rain as storms in early May of 1986 contaminated farmland, as pools seeped into the water table. Farmers in Wales faced restrictions on their livestock; their sheep were classed as radioactive, monitored and restricted for years after the 1986 disaster.

Across the globe, the catastrophic accident at Chernobyl inflamed anti-nuclear sentiments. Individual citizens and national governments demanded that Moscow take steps to prevent another such accident. Some 40,000 demonstrators showed up to protest a nuclear power plant in Brokdorf, a small town in the northern parts of the Federal Republic of Germany. The West German foreign minister, Hans-Dietrich Genscher, demanded nothing short of the closure of all Soviet nuclear reactors.

The disaster at Chernobyl horrified Mikhail Gorbachev, the General Secretary of the Communist Party of the Soviet Union. For Gorbachev, the damage done by Chernobyl drove home the dangers of the atomic age and of nuclear annihilation. Countless of Gorbachev’s advisers later recalled that the horrific accident encouraged the General Secretary to seek dramatic nuclear reductions in negotiation with his American counterpart, Ronald Reagan.

Chernobyl also spurred on Gorbachev in pursuing a policy of glasnost - or openness - in Soviet society. In the years that followed, that same policy of openness made it possible for citizens in the affected areas of the Soviet Union to express their frustration with how the government had handled (or mishandled) Chernobyl.

By 1989, there were mass demonstrations taking place in Ukraine and Belarus, as residents of the two republics tried to lift the veil of secrecy about the degree of damage caused by the accident. Demonstrators decried a Soviet cover-up of the dangers, as concerned citizens produced documents that showed that Soviet officials had pushed on with a May Day parade in Kyiv, just days after the accident, despite knowing that radiation levels were high. Chernobyl became a rallying cry in the Ukrainian push for independence.

TIMELINE OF DISASTER

The lead-up and aftermath of the terrible Chernobyl reactor accident

DAY ZERO – 25 APRIL 1986

01:00
Preparations for a safety check on reactor no. 4 begin with power being reduced

14:00
Emergency core cooling on reactor no. 4 is also disabled so it won’t interfere with the test

23:10
Permission for the test to continue is given even though the less experienced nightshift takes over

DAY ONE – 26 APRIL 1986

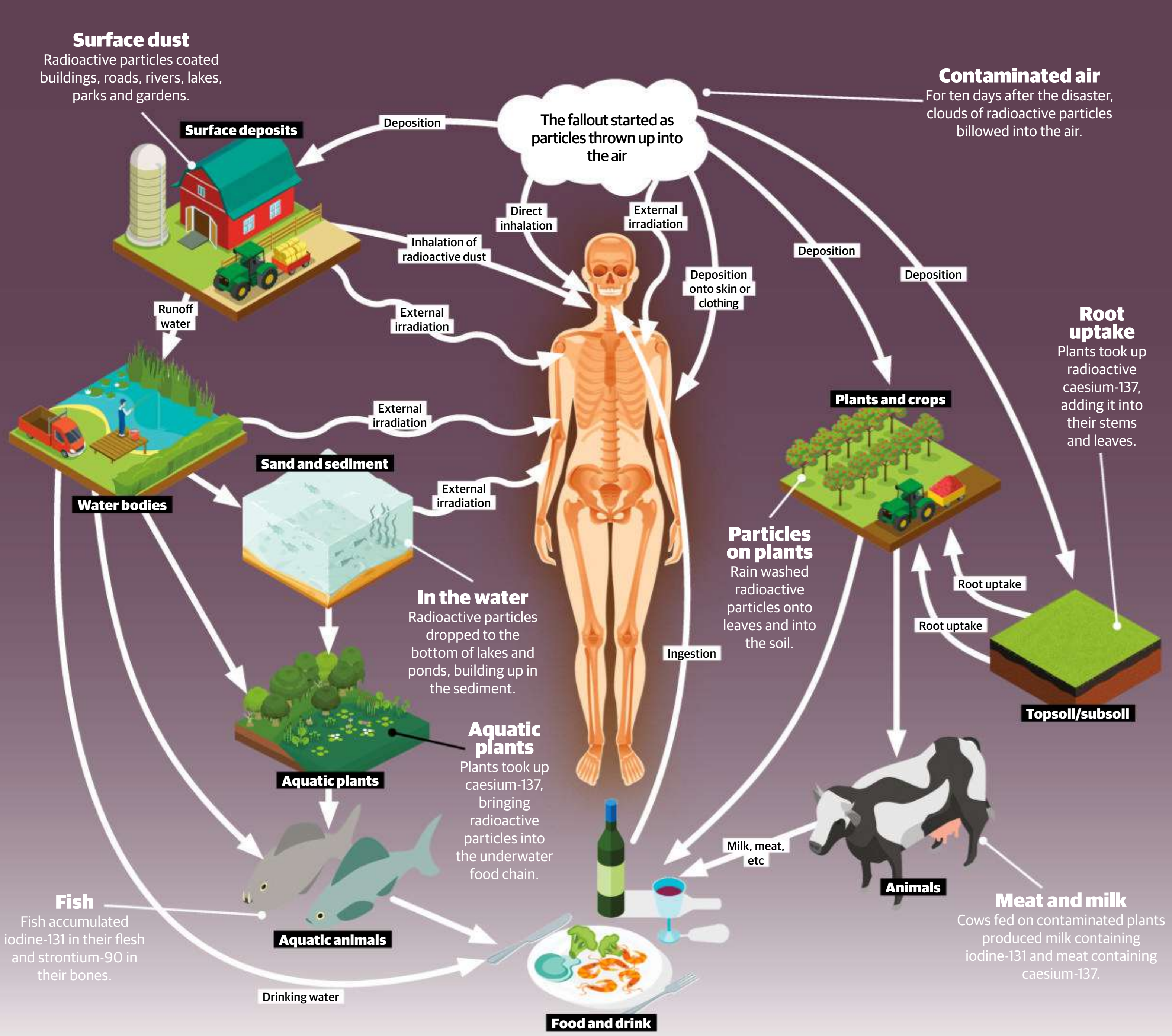
00:28
Power drops below stable limits. Operators break safety guidelines by removing the control rods in hopes of raising the power output

01:00
Test is given permission to proceed once power stabilises. Emergency shutdown and safety features are deactivated

01:23:04
A power surge occurs as the test begins on reactor no. 4

HOW THE RADIATION SPREAD

Nuclear fallout moved through the environment in the days, weeks and months after the disaster


The fallout started as particles thrown up into the air
Surface deposits
Deposition
Direct inhalation
External irradiation
Inhalation of radioactive dust
Deposition
Deposition onto skin or clothing
Deposition
Runoff water
External irradiation
External irradiation
Water bodies
Sand and sediment
External irradiation
Plants and crops
Root uptake
Root uptake
Topsoil/subsoil
Ingestion
Aquatic plants
Milk, meat, etc
Animals
Aquatic animals
Drinking water
Food and drink

Surface dust
Radioactive particles coated buildings, roads, rivers, lakes, parks and gardens.

Contaminated air
For ten days after the disaster, clouds of radioactive particles billowed into the air.

Root uptake
Plants took up radioactive caesium-137, adding it into their stems and leaves.

Particles on plants
Rain washed radioactive particles onto leaves and into the soil.

In the water
Radioactive particles dropped to the bottom of lakes and ponds, building up in the sediment.

Aquatic plants
Plants took up caesium-137, bringing radioactive particles into the underwater food chain.

Fish
Fish accumulated iodine-131 in their flesh and strontium-90 in their bones.

Meat and milk
Cows fed on contaminated plants produced milk containing iodine-131 and meat containing caesium-137.

01:23:40
The emergency shutdown button is pressed, but the control rods jam as they enter the core

01:23:58
A steam explosion occurs as the coolant water is vaporised in the pipes, blowing the roof off the reactor

01:28
With the reactor's exposure to air starting fires, firefighters arrive, but wear no protective clothing for radiation

02:15
An emergency meeting of Soviet officials gathers, closing roads in and out of the nearby town of Pripyat

06:35
The firefighters have successfully put out the fires except for the one in the reactor core, which burns for several days

10:00
Sand, clay, boron, lead and dolomite is dropped onto the burning core in attempts to extinguish the fire

DAY TWO – 27 APRIL 1986
36 hours after the disaster, officials begin an evacuation of 115,000 people from Pripyat and nearby towns and villages. They're told it's temporary

DAY THREE – 28 APRIL 1986
Swedish monitors pick up large amounts of radiation. Officials admit there has been an accident but claim it is under control

DAY FOUR – 29 APRIL 1986
The US gets its first look at the disaster from satellite photos and see the full devastation of the incident

Numerous international organisations have been involved in addressing the ongoing effects of the Chernobyl disaster, much of it focused on the safety of the site itself.

Despite the devastating accident in April of 1986, the other three reactors at the Chernobyl plant remained in operation. At the beginning of 1990, the Ukrainian parliament voted in favour of closing the plant by 1995. These timetables were sped up in the fall of 1991, after a fire broke out at unit 2 and destroyed part of the roof of the turbine hall. Unit 2 would be closed effective immediately, with the remaining two slated to be closed in 1993. But, before that could be done, parliament reversed its 1990 decision in the autumn of 1993. The reactors would remain in use.

European governments tried to make the closure of the plant a crucial issue in the early 1990s, linked to broader development assistance for Ukraine. These attempts failed: the plant remained in operation until December of 2000.

Starting in 1990, the United Nations took on a more active role in addressing the consequences of the disaster, a role made possible by the Soviet government's growing acceptance that international assistance was needed. The General Assembly called for international cooperation to deal with the ramifications of Chernobyl.

A vast array of initiatives received support from the United Nations, dealing with all aspects of the issue. Since 1986, according to the UN's estimates, various UN bodies and major non-governmental organisations have started some 230 research and assistance programs to address issues arising out of the Chernobyl accident.

The most visible sign of international cooperation to deal with the aftermath of Chernobyl, however, is the vast engineering project to contain the radioactive remains of the nuclear reactor. In 1986, in the months following the accident, the Soviet Union constructed a shelter to seal off Reactor 4. But this initial structure, known as the sarcophagus, began to crumble, threatening the release of new radioactive contaminants.

An international effort supported the construction of a new structure to surround Reactor 4, a project known as the New Safe Confinement. A massive metal half-cylinder, measuring 109 metres high and 257 metres in length, the New Safe Confinement covers both the old, crumbling sarcophagus and the damaged reactor. It was installed in late 2016, some 30 years after the initial accident. And the project's cost is immense: the European Bank for Reconstruction and Development, responsible for coordinating the funds, estimates the total cost at some €1.5 billion.

When one thinks of the so-called 'ghosts' of Chernobyl, the most immediate connection is to the exclusion zone ringing the nuclear power plant. Chernobyl, as the site is often summed up, is a ghost town. Tourists and journalists flock there to see an abandoned site, the latest batch inspired by HBO's hit television series, *Chernobyl*.

Seemingly frozen in time, the buildings of Pripyat show signs of life from a state that no longer exists, that of the Soviet Union. It is hardly surprising, then, that it is tempting to see Chernobyl as something of the past, maybe even as a relic unique to the Soviet era.

Historians, scientists and activists, however, all remind us that the high-profile accident continues to be a pressing issue, decades after the initial accident. News reports detail the ongoing impact of high radioactivity levels on agriculture across Europe, not just in the three countries most affected by the disaster. Others continue to debate how disease rates are linked to Chernobyl. Ongoing international cooperation, like the immense project to build and install a new structure to confine the radioactive rubble remaining, is a stark reminder that the ghosts of Chernobyl remain. We're still living with the fallout.

> "Their sheep were classed as radioactive, monitored and restricted for years after the 1986 disaster"

© Alamy

LEFT
The control room of another reactor at Chernobyl, which continued to produce power for years after the disaster

MIDDLE
Everyone needed to be tested for their radioactivity levels after the evacuation

RIGHT
Pripyat remains a chilling ghost town, with the fairground left as it was in 1986

RIGHT
Fires are still common in the uninhabited zone, sometimes caused accidentally by people passing through, but with radioactivity still present they need to be extinguished quickly

All images © Getty

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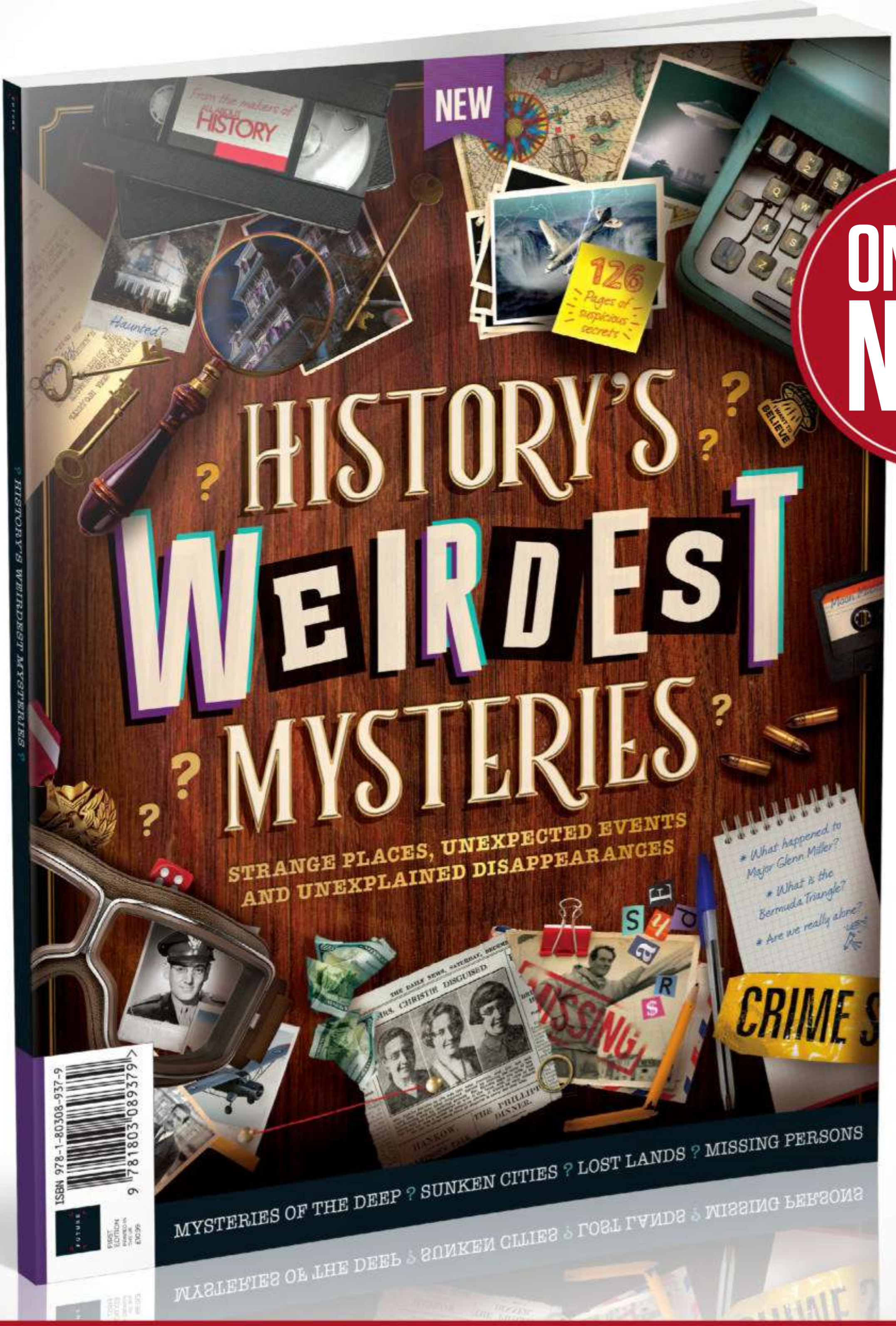
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9/11

The inside story of the terror attacks that changed America forever

Written by June Woolerton

ABOVE
The second hijacked plane is flown into the South Tower of the World Trade Center

All images: © Getty Images

LEFT Panicked onlookers run for their lives as the burning World Trade Center collapses

RIGHT An injured firefighter is lifted from the rubble by his colleagues

BELOW A lone firefighter stops amid the debris following the collapse of the second tower at the World Trade Center

The morning of 11 September 2001 was bright and calm across much of the East Coast of the United States of America. In New York, many city workers began their days as usual with a jog, running beneath a late summer's blue sky. In Florida, Commander in Chief President George W Bush did exactly the same, enjoying an early morning run ahead of a routine visit to a school. Twelve hours later, many of those same workers would sit in front of their televisions watching him promise to protect their nation following the deadliest terrorist attacks the Western world had ever seen.

As the joggers got ready for work, two men spoke to each other by phone from two different departure lounges at Logan International Airport in Boston. Mohamed Atta and Marwan al Shehhi chatted for around three minutes. It would be their last conversation.

For several years, they had been part of a terrorist cell preparing for a string of attacks on targets across the US. They planned to hijack planes laden with fuel and fly them into high-profile targets. Atta, along with three other hijackers, boarded American Airlines Flight 11 while al Shehhi and another four conspirators headed for AA Flight 175. The planes took off within 15 minutes of each other, both bound for Los Angeles. They would never arrive. Within an hour, both had been taken over by the terrorists and crashed deliberately into the Twin Towers of the World Trade Center in New York as the world watched.

Garrett M Graff is a leading historian of the attacks that became known as 9/11. He has spent years listening to the testimonies of those who experienced the attacks first-hand, their tales brought together afresh in his new book *The Only Plane in the Sky: An Oral History of 9/11*. For him, much of what we know of the day has been established with hindsight. "The story that we teach of 9/11, the history that we tell, is a much neater and simpler and knowledgeable history of that day than the experience of anyone who was there," he says. "We say there were four planes, the whole thing began at 8.46am with the first crash into the North Tower, the whole thing ended 102 minutes later at 10.28am with the collapse of the second tower, there were four strikes, two at the Twin Towers, one at the Pentagon, one at Shanksville, and slightly under 3,000 people died. Well, that's not the day that anyone who lived 9/11 remembers. We didn't know when the attacks began, we didn't know when they were over, we had no idea of the scale of the tragedy and we had no idea of what came next."

When Flight 11 flew into the North Tower, many people on the ground presumed it was an accident. But authorities already knew they were dealing with a terrorist incident. A quarter of an hour into its flight, the cockpit team had stopped acknowledging air control's messages. A flight attendant, Betty Ong, had made contact with American Airlines Reservation Center in North Carolina, telling them: "I think we're getting hijacked." She reported that two flight attendants and a passenger in business class had been stabbed, and said she thought mace had been used and that people were struggling to breathe. Another attendant, Amy Sweeney, got through to the American Flight Services Office in Boston and told them she couldn't contact the cockpit but there was a bomb in there. Her last words to them were: "We are way too low." Within seconds, the plane had hit the North Tower between the 93rd and 99th floors. Everyone on the plane was killed instantly. So, too, were the people working on those floors. The jet fuel created a massive fireball on impact that burned through one bank of elevators.

For those in other parts of the North Tower, the noise and movement of the building was unusual but didn't immediately signal an emergency.

A timeline of the day

Events as they happened on 11 September 2001

7.59AM
Flight 11 departs Logan International Airport with 11 crew and 81 passengers on board, bound for Los Angeles. Among the passengers are four hijackers

8.14AM
Flight 175 leaves Logan International bound for Los Angeles. Five hijackers, another 51 passengers and nine crew are on board

8.14AM
Flight 11 is hijacked over Massachusetts

8.20AM
Flight 77 departs Washington Dulles Airport, en route to Los Angeles, carrying six crew and 58 passengers, including five hijackers

8.42AM
Flight 93 takes off from Newark International Airport carrying seven crew and 37 passengers, among them four hijackers

8.42AM
Flight 175 is hijacked above New Jersey

8.46AM
Flight 11 is crashed into the North Tower of the World Trade Center

8.50AM
Flight 77 is hijacked above southern Ohio

9.03AM
Flight 175 is crashed into the South Tower of the World Trade Center

9.05AM
US President George W Bush is informed that America is under attack

9.28AM
Flight 93 is hijacked above northern Ohio

9.37AM
Flight 77 is crashed into the west side of the Pentagon

9.42AM
The Federal Aviation Authority grounds all civilian planes in US airspace and orders all airborne aircraft to land immediately

9.45AM
US airspace is shut down completely

9.55AM
US President George W Bush is flown to an undisclosed destination on Air Force One

9.57AM
Passengers on board Flight 93 begin to tackle the hijackers

9.59AM
The South Tower of the World Trade Center collapses

10.03AM
Flight 93 crashes into a field at Shanksville, Pennsylvania

10.28AM
The North Tower of the World Trade Center collapses

10.50AM
Five stories of the Pentagon collapse as fire continues to engulf part of the building

5.20PM
7 World Trade Center collapses after sustaining heavy damage from the collapse of the Twin Towers

8.30PM
President George W Bush addresses the United States from the Oval Office

Bruno Dellinger was on the 47th floor. He later told the 9/11 Memorial and Museum that, "the building swung for maybe two or three minutes, we were used to the building swaying, of course, because of when it was a stormy day". Emails and phone calls from people inside the building show them asking relatives to put on the TV to find out what had happened. Within minutes, media outlets across the US and then the world began to run images of the Twin Towers, smoke billowing from the North Tower.

Graff says that although there was concern, New York carried on pretty much as usual: "Peter Johanssen, who is New York commuter ferry captain that morning… talks about how he watched the first crash from New York harbour, comes in, docks at the Wall Street terminal in the shadow of the World Trade Center and every single passenger on his ferry gets off and walks into Lower Manhattan even as there is paper and debris raining down on them from the World Trade Center. Everyone is like, 'Oh, this is a weird thing that happens in New York City' and just goes about their day."

Those workers would have heard sirens wailing as the emergency services mobilised. The New York Fire Department responded within seconds of the crash and its first contingent arrived six minutes after impact. As one ladder company climbed into the Tower to assess the situation, chiefs raced to work out their best plan of action, but they already knew the scale of the blaze meant their focus was rescue rather than firefighting. An emergency command post was set up in the lobby as authorities including the New York Police Department and the Port Authority came together to tackle the unfolding crisis.

However, as they discussed evacuating the South Tower over concerns about the flames caused by the crash of Flight 11, their contact centres had no new information. They were deluged with calls, including many from inside the North Tower, and began by following protocols and telling people to stay where they were. However, as the urgency of the situation became clear, some began to tell people to leave. Meanwhile, NYPD helicopters began reconnaissance flights to plan possible rescues.

Inside, some still watched TV. They, like millions around the world, would see Flight 175 flown into the South Tower of the World Trade Center just 17 minutes after the North Tower was hit. One passenger on that second flight, Peter Hanson, had called his father just beforehand to tell him: "It's getting bad, Dad, a stewardess was stabbed, they seem to have knives and mace, they say they have a bomb." His last words were: "It if happens, it'll be very fast, my God, my God." The plane hit the Tower between the 77th and 85th floors, killing everyone on board instantly and hundreds more within the building.

In Sarasota, Florida, President Bush was just about to start reading to pupils when his Chief of Staff, Andrew Card, moved in to whisper to him: "A second plane hit the second tower, America is under attack." The President moved to another classroom to take phone calls as officials made plans to rush him to safety.

> "The story that we teach of 9/11 is a much neater and simpler history than the experience of anyone who was there"

2
TO REPORT
N.Y. DIAL 9
FDNY

LEFT
Shocked and exhausted rescue workers take a brief rest as they search for survivors

RIGHT The recovery operation at all four sites hit by the planes on 9/11 went on for months. The last piece of debris was symbolically removed from Ground Zero in May 2002

An evacuation of both towers was now underway as fires continued to spread. The thick smoke had forced many to keep moving upwards, and some on the highest floors had fallen or jumped as the heat and smoke overwhelmed them. Just 56 minutes after the second hijacked plane had crashed into it, the South Tower collapsed in on itself in just ten seconds. Everyone inside was killed, as were people in the immediate vicinity of the building. A huge cloud of debris spread through the neighbouring streets as onlookers ran for their lives. Hundreds more died when the North Tower collapsed just over half an hour later.

Mychal Judge, the Chaplain to the New York Fire Department, had rushed to the North Tower when he heard of the crash to offer his help. After the South Tower was struck, he was hit by debris and his body was found just a few minutes later. He became the first identified victim of the attacks in New York that would claim, in total, 2,753 lives.

Among the dead were 343 firefighters, 23 police officers and 37 Port Authority officers. "Part of what is important to understand about the men and women who responded that day from the Fire Department of New York, the NYPD, the Port Authority Police, the other agencies involved, is that these are very small families and fraternities. A lot of people who are responding to this are brothers, fathers, sons, uncles, nephews," Graff explains. "They are sort of seeing family pass in the stairwells and lobbies of the World Trade Center, seeing family on the streets outside and then by that afternoon, you have family members tearing frantically into the rubble to find the people that they have lost."

As the South Tower was hit, air authorities had begun grounding planes, but two more airliners targeted by the terrorists were already in the sky by then. As the world watched New York, American Airlines Flight 77 was hijacked on its way from Washington Dulles Airport to Los Angeles. Barbara Olson rang her husband to tell him that her plane had been hijacked and all the passengers had been forced to the back of the aircraft. Flight attendant Renee May called her parents to say the flight was under attack. The plane descended and crashed into the Pentagon, causing a massive fire. Everyone on board was killed along with dozens inside the building. In total, 184 people lost their lives in that attack.

During her last phone call, Olsen had been told about the crashes in New York. On Flight 93, the fourth plane targeted by hijackers, everyone on board was aware of the attacks on the World Trade Center and the Pentagon. The plane had left Newark International Airport late and was on its way to San Francisco when the terrorists took control of it. There were just 33 passengers on board the flight and around a third of them phoned family or friends as the hijacking unfolded. They learned of the attacks on the Twin Towers and described similar circumstances on board, including violent attacks on cabin crew and reports of bombs on board. One passenger, Todd Beamer, made contact with an Airfone supervisor, Lisa Jefferson. In their brief conversation he explained that the passengers had decided to take on the hijackers. The two prayed together before Beamer was heard to say: "Are you ready? Okay, let's roll."

The plane's voice data recorder would later reveal fighting in the cockpit as the passengers attacked the hijackers. The terrorists decided to crash the plane, which plunged into a field at Shanksville, Pennsylvania. All 33 passengers and seven crew were killed.

"The actions of passengers and crew of Flight 93 is in many ways one of the proudest moments that the country has of that day," Graff tells us. "It seems pretty clear from historical evidence that

> "As the South Tower was hit, air authorities had begun grounding planes, but two more airliners targeted by the terrorists were already in the sky by then"

The War on Terror

The global aftermath that we continue to live with today

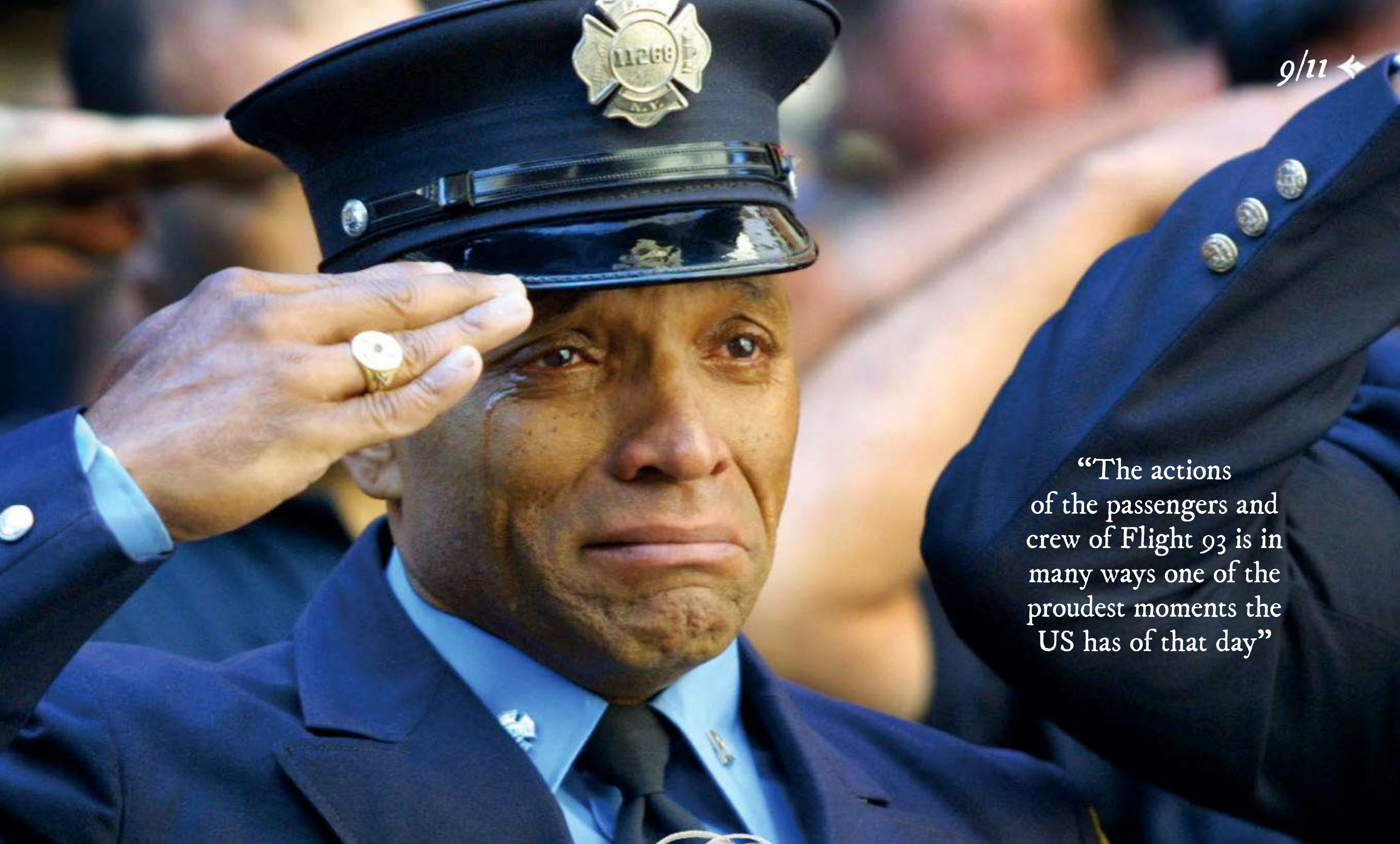
Less than a month after the 9/11 attacks, the US launched air strikes on Afghanistan. The ensuing conflict there, aimed at al-Qaeda and the Taliban, would become known as the War on Terror.

The four planes had been hijacked by a total of 19 terrorists. Four of them were involved in the 'Hamburg Cell', a group that met in the German city and began to plot against America. Among them was Mohamed Atta, the lead hijacker. A chance meeting on a train with a member of al-Qaeda led to them going to Afghanistan, where they would meet Osama bin Laden.

The al-Qaeda leader had, for several years, been focused on a plot to hijack planes and fly them into targets in the US. The idea came originally from militant Islamist Khalid Sheikh Mohammed, who met bin Laden in Afghanistan in 1996 and proposed the plan. A wide range of motives for the attacks has been suggested but all come back to a desire to damage America. The final stages of the plan saw four pilots chosen, among them Mohamed Atta. Others were recruited as 'muscle hijackers' with the task of overcoming any resistance from the crew and passengers.

In the immediate aftermath of 9/11 bin Laden denied any involvement in the plots. However, the US government soon concluded that al-Qaeda was responsible. The Taliban, then in control of around three quarters of Afghanistan, also came under suspicion for not removing bin Laden from the country. US air strikes began the War on Terror, which saw the Taliban surrender grip on Afghanistan by December 2001.

However, they remained and eventually staged a resurgence. As the 20th anniversary of 9/11 approached, Afghanistan was taken over once more by the Taliban. On 15 August 2021 they took over the capital Kabul, once again seizing control of the country that had been the focal point of the War on Terror.



"The actions of the passengers and crew of Flight 93 is in many ways one of the proudest moments the US has of that day"

ABOVE
Firefighter Tony James weeps for the NYFD Fire Chaplain Mychal Judge, who became the first identified victim of 9/11

RIGHT
Flags flew at half mast around the United States for weeks following the terror attacks

that plane was headed towards the US Capitol, and you can imagine the destruction of US Capitol as a visible gash in the nation's psyche as extreme as the Twin Towers missing from the New York skyline."

Around the time that Flight 93 crashed, President Bush took to the skies in Air Force One. He would be in the air for much of the day as part of the plan to keep him safe from attack. He could only communicate by phone while his Defense Secretary, Donald Rumsfeld, was briefly missing from discussions as he rushed to help the injured at the Pentagon.

Air Force One was one of just a handful of planes in the sky as the morning of 11 September 2001 turned into afternoon. Before the Twin Towers had even collapsed, all civilian aircraft had been grounded. Graff describes the following hours as fearful: "Well into the early afternoon, 1, 2, 3 o'clock, the US government thought there still might be as many as a dozen more hijacked airliners still in the sky. That fear rippled out across the country, you saw skyscrapers evacuated in Boston, in Chicago, in Los Angeles. You saw the subway in Toronto closed. Well into that first day, well into that first night, people feared that the death toll might be 20, 30 thousand."

As that first night fell, Bush returned to the White House, where he addressed the United States from the Oval Office. "A great people has been moved to defend a great nation," he said. "Terrorist attacks can shake the foundations of our biggest buildings but they cannot touch the foundation of America. These acts shatter steel but they cannot dent the steel of American resolve."

In the following days, he would draw together a plan to strike at those held responsible for the attacks with al-Qaeda and its leader, Osama bin Laden, quickly identified. Congress passed the resolution 'Authorisation for Use of Military Force Against Terrorists' three days after the attacks and within a month the US had launched military strikes on Afghanistan, targeting al-Qaeda and the Taliban, which hadn't expelled the terrorist group from the country.

Meanwhile, in New York, at the Pentagon and in a field in Pennsylvania, recovery work continued to find the bodies of those killed. Some of the victims wouldn't be identified for years. They are honoured in memorials around the United States while 11 September was renamed Patriot Day, a reminder of all that was lost on a late summer morning when the sun rose in a clear blue sky and the United States changed forever.

Burning Times

Learn how witch hunts wreaked havoc across Europe and the New World for over 300 years

Written by Alice Pattillo

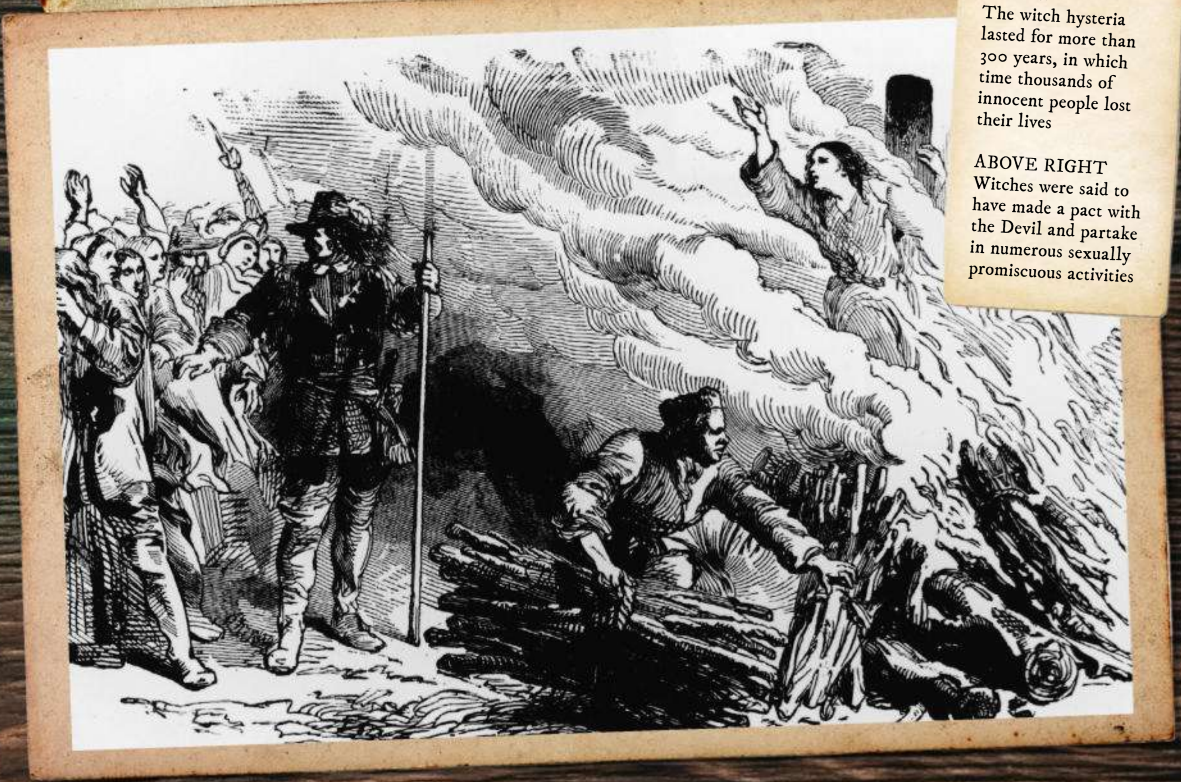
The 'witch craze' was a tragic period in the Western world's early modern history – lasting from the 14th to 18th centuries, it displayed the largest example of mass hysteria in history. It is estimated that as many as 70,000 people were executed as witches in Europe and North America during this time, of which 75-80 percent were women. Witch hunting hit its peak during the Reformation, with a flurry of persecutions occurring from the mid-16th to the late-17th centuries.

A PANDEMIC OF PERSECUTION

Blaming witchcraft for social ills and misfortune dates back to ancient times. Babylonians required anyone who was found to have cast a spell to cleanse themselves in a holy river and the Romans outlawed magic, condemning sorcerers to crucifixion or to be burnt alive. However, the Christian world initially didn't take accusations of witchcraft seriously. Many influential religious leaders didn't see magic as a threat, deeming it delusions, the Devil himself playing tricks – no human could wield such power, God alone had the capability to perform anything miraculous. However, with increasing concerns about heresy and conspiracies that the Catholic Church might lose its stronghold over Europe to Protestant sects and other religions (such as Judaism), the clergy needed a scapegoat.

In the late Middle Ages, the Church began to argue for the existence of demons, magic and witchcraft. Witchcraft – the practice of magic in league with the Devil – provided the perfect excuse to cleanse the population of anyone who caused them, or any other person in power, any trouble by appealing directly to superstitious commoners: the folk-magic-believing population of medieval Northern Europe. By the early 1700s, the witch-hunting craze had spread throughout Scandinavia, the Netherlands, Germany, Britain and Northern Ireland, the Baltic states, Switzerland, France and Hungary, finally reaching American shores by the end of the century. When an accusation arose, it would typically result in a cluster of further accusations, as one party blamed another or roped in others to suffer the same fate under duress, meaning trials could continue for years.

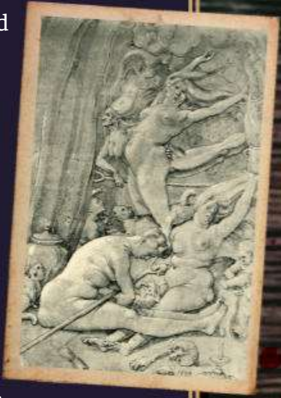
The era of witch hunting finally came to a close with the rise of science and numerous countries passing laws to prevent accusations or claims of any form of magic. Alas, that wasn't before the mania had resulted in the excruciating torture and violent deaths of tens of thousands of innocent, everyday folk.



BELOW The witch hysteria lasted for more than 300 years, in which time thousands of innocent people lost their lives

ABOVE RIGHT Witches were said to have made a pact with the Devil and partake in numerous sexually promiscuous activities

WHAT MAKES A WITCH?



Commonly described as cannibals who devoured children, it was during the witch craze that the stereotype of the wart-skinned hag developed. Witches were said to ride goats to the sabbat, congregate in remote places to partake in debauched ceremonies to make pacts with the Devil (particularly upon mountain tops, according to Germanic and Scandinavian folklore), and cause chaos for communities with their malevolent magic. They could be held responsible for anything from missing children and illnesses to misfortune and even murder. French jurist and philosopher Jean Bodin describes a witch as "one who knowingly tries to accomplish something through diabolical means" in his 1580 influential text on demonology, *De la Démonomanie des Sorciers*. Unfortunately, the majority of those accused of witchcraft were simply the victims of petty disputes and had no magical knowledge or experience whatsoever. To be branded a witch you merely needed to get on the wrong side of the wrong person, but there were some other traits that could make you more susceptible to the Devil's influence – having red hair, being left-handed, skilled in midwifery or possessing knowledge of medicinal herbs and plants. You were surely a witch if you were the bearer of a Devil's Mark – essentially a birthmark, large mole, third nipple, skin tag, wart or any distinguishing bump – and these could be used against you as utmost proof of your allegiance to the Devil. These marks were thought to be a teat from which a witch's familiar (a Devilish animal who would do the witch's bidding) would suckle blood.

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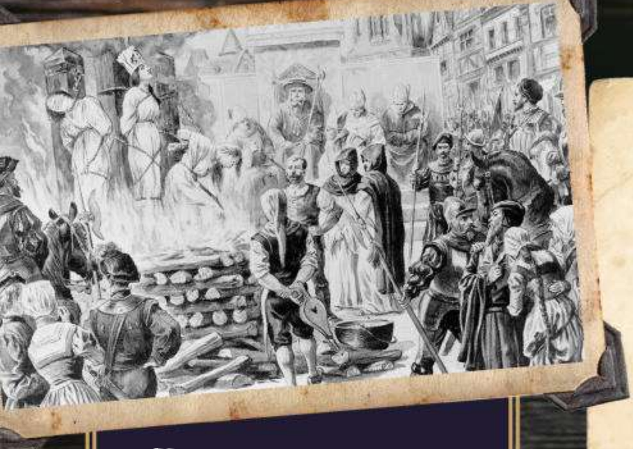
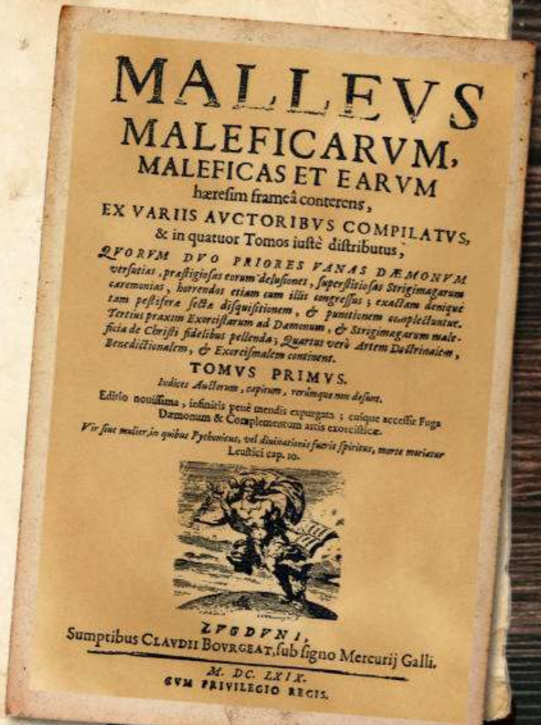


EARLY WITCH HUNTS

The earliest recorded witch trials took place in the Swiss and French Alps in the early 15th century. One of the most famous trials during this time was that of Joan of Arc, who had claimed she heard the voice of God and was hailed as the saviour of France in the war against the English and led an army at the tender age of 18. However, the pias peasant girl was accused of being in league with the Devil by the English and burnt at Rouen in 1431 for witchcraft and heresy, aged 19. By 1484, the witch craze had spread to Ravensburg in Germany, where a group of women were accused of holding a witches' sabbat near the church, inspiring Dominican monk and prosecutor at the trial, Heinrich Kramer, along with Jacob Sprenger, to write the infamous *Malleus Maleficarum* in 1487 – the text later used by the proponents of the Salem Witch Trials and which promoted the idea that women are more likely to practice witchcraft.



MALLEVS
MALEFICARVM,
MALEFICAS ET EARVM
hæreſim frameâ conterens,
EX VARIIS AVCTORIBVS COMPILATVS,
& in quatuor Tomos iuſtè diſtributus,
QVORVM DVO PRIORES VANAS DÆMONVM verſutias, præſtigioſas eorum deluſiones, ſuperſtitioſas Strigimagarum cæremonias, horrendos etiam cum illis congreſſus; exactam denique tam peſtiferæ ſectæ diſquiſitionem, & punitionem complectuntur. Tertius praxim Exorciſtarum ad Dæmonum, & Strigimagarum maleficia de Chriſti fidelibus pellenda; Quartus verò Artem Doctrinalem, Benedictionalem, & Exorciſmalem continent.
TOMVS PRIMVS.
Indices Auctorum, capitum, rerumque non deſunt.
Editio nouiſſima, infinitis penè mendis expurgata; cuique acceſſit Fuga Dæmonum & Complementum artis exorciſticæ.
Vir ſiue mulier, in quibus Pythonicus, vel diuinationis fuerit ſpiritus, morte moriatur
Leuitici cap. 10.

LVGDVNI,
Sumptibus CLAVDII BOVRGEAT, ſub ſigno Mercurij Galli.
M. DC. LXIX.
CVM PRIVILEGIO REGIS.

ABOVE LEFT
An artist's depiction of people being burned at the stake for witchcraft in Germany

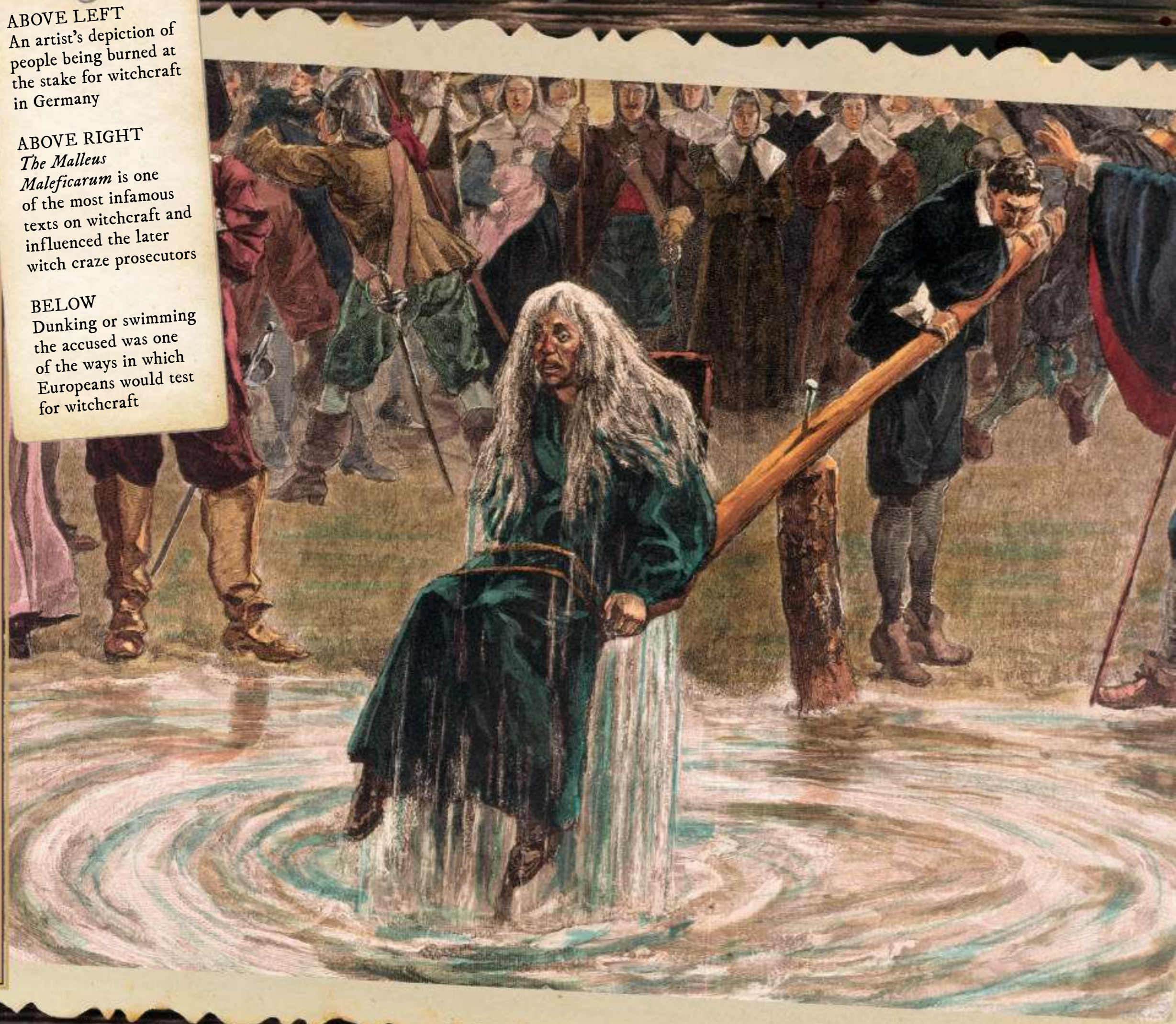
ABOVE RIGHT
The Malleus Maleficarum is one of the most infamous texts on witchcraft and influenced the later witch craze prosecutors

BELOW
Dunking or swimming the accused was one of the ways in which Europeans would test for witchcraft

DEVILRY IN DEUTSCHLAND

The 1580s saw an increase in larger hunts and mass trials across Europe, where the majority of witch trials occurred within the Holy Roman Empire in what is now present-day Germany. Spearheaded by the archbishop Johann von Schönenberg between 1581 and 1593, the Trier witch trials led to the death of around 368 people just within the city itself, and likely many more within the surrounding diocese, all burned alive at the stake. It is one of the most well documented witch trials in history and garnered a huge amount of attention across contemporary Europe. Ten years after the Trier witch trials came to a head, over 200 people were executed in the town of Fulda between 1603 and 1606. The pandemic continued to spread throughout Germany – to Eichstött, Württemberg, Wiesensteig and Ellwangen. The Würzburg witch trials from 1625 to 1631, saw over 200 people sentenced to death by burning or beheading within the city and perhaps even more fatalities while in custody within the ecclesiastical principality as a whole. Meanwhile, in Bamberg, the largest mass extermination of so-called witches was taking place. Over 1,000 lives are said to have been claimed from approximately 1626 to 1632.

> "The Würzburg witch trials from 1625 to 1631, saw over 200 people sentenced to death"



BEWITCHED BRITAIN

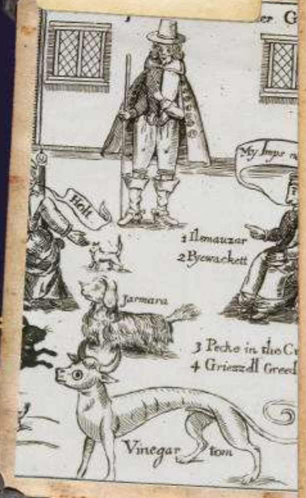
King James VI of Scotland (later crowned King James I of England) had an unhealthy obsession with demons and witches, even publishing his own bestseller, *Daemonologie*, on the subject. In 1589 he came to believe that witchcraft was behind a so-called plot to kill him and his new wife, Anne of Denmark. The couple had encountered severe storms when James had collected his new bride from Denmark and he was convinced a hex was to blame. The ongoing Trier witch trials had caused quite the stir in Denmark (a country already fond of a witch hunt or two) and inspired the admiral of the Danish fleet to blame the mishaps of the bridal fleet on witchcraft, leading to the Copenhagen witch trials in 1590.

This influenced the superstitious King James, who claimed that witches in North Berwick summoned the severe storms he and his bride encountered with the intent to kill him at sea. As a result, he began a crusade against witchcraft in Scotland that same year and tried over 70 (and possibly as many as 200) 'witches' in North Berwick, subjecting them to brutal tortures and subsequently gruesome executions.

When James ascended the English throne, witchcraft coincidently spread throughout England. In 1612, 20 people were tried for murder by witchcraft in Lancashire, with ten losing their lives. The trial is one of the best on record from the 17th century, thanks to court clerk Thomas Potts and his publication of *The Wonderfull Discoverie of Witches in the Countie of Lancaster*. It is estimated that as many as 5,000 trials took place across Britain, with approximately 500 executions in England and at least 200 in Scotland. Self-appointed 'Witchfinder General', Matthew Hopkins, was responsible for approximately half the executions in the country. His book, *The Discovery of Witches*, informed much of the methods that were used in the Salem Witch Trials and references King James I's *Daemonologie*.

BELOW
England's most infamous witchfinder, Matthew Hopkins, was responsible for up to 300 executions

BELOW RIGHT
The Salem Witch Trials were not the only trials to take place in North America, but they are by far the most infamous



NEW WORLD ORDER

Salem, Massachusetts is perhaps the most infamous site of the North American witch trials, perhaps in part thanks to numerous fictionalisations, in particular Arthur Miller's *The Crucible*, and the town's capitalisation of its dark history. Puritanical Americans proved an easy target for the witch craze, with their strict religious standards and constant plights in the New World – such as threats of war from every angle, epidemics of disease and difficulties with harvests – it was the perfect environment for such superstitions to take hold and spread like wildfire.

Taking place between 1692 and 1693, the Salem Witch Trials were the last high-profile case of its kind and resulted in more than 200 accusations against people in the County of Essex, Massachusetts, leading to 150 imprisonments, 30 guilty verdicts and the execution of 20 people, despite the prosecutions hinging entirely on the testimonies of two teenage girls fuelled by childish hysteria and family feuds. Also, the administration of torture was applied to extract confessions, taking tips from both Matthew Hopkins and Heinrich Kramer. Initially the girls, who were experiencing alleged fits and convulsions, accused a Caribbean slave named Tituba, a homeless woman by the name of Sarah Good and a resident of a nearby village, Sarah Osborne. But the spectacle soon spun out of control, leading to 19 people sentenced to death by hanging, and one man being pressed to death for refusing to plead.

TRIED AND TESTED

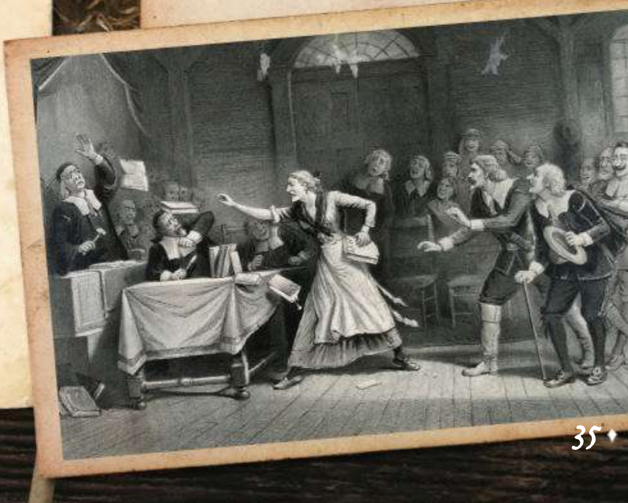
Those accused of witchcraft were put through gruelling torture in order to prove they were a witch and/or extract a confession out of them.

James I declared that witches were "loathe to confess without torture" and a variety of torture methods were put in place in order to force a confession out of alleged witches – unsurprisingly, most 'confessions' were falsified in a desperate plea to stop the abuse. The witchfinders weren't particularly shy about revealing what they did – a number of them wrote handbooks to help others to identify and punish witches.

Sleep deprivation was a popular choice of torture, as was the use of instruments that would either distend, stretch or crush the victim. Tools included a witch's bridle (a torturous muzzle that attached to the head and commonly featured a spiked plate that would prevent the victim from speaking, or iron prongs that would press into the accused's face), a thumbscrew (a vice that would crush fingers or toes), or a strappado (a device that suspended the victim by a rope that bound their hands behind their back and often dislocated their shoulders). Most of these tortures were designed to be administered in public, adding humiliation to the pain.

There were many ways in which witchfinders would 'test' for witchery, these included 'swimming' or 'dunking'. The accused was cast into a deep body of water with their hands and feet bound, often attached to a chair or similar device or rope. It was believed that if the accused was a witch, the water would reject them and they would float. If they sank, they were innocent. Unsurprisingly, many drowned as a result of the test despite this proving them innocent. Although illegal, England's Witchfinder General, Matthew Hopkins, favoured this method.

If a witch survived the tremendous torment of being tested or the torturous process of extracting confession, they would most often either be burned alive or in Europe, burned after strangulation – as this was seen as the most painful way to die. The more popular way to execute those found guilty of witchcraft in North America was by hanging.



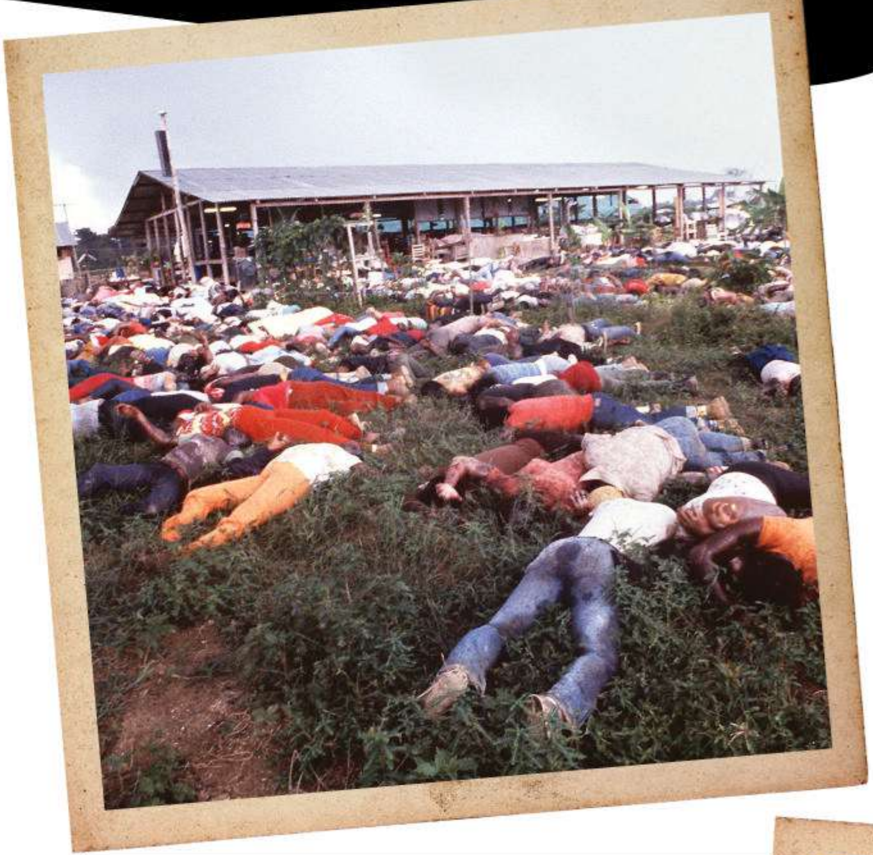
© Getty; Alamy

KILLER CULTS

From disturbing sadistic sects to militant terrorist organisations, you don't want to fall under the control of these warped cults in their bid for world domination, lest you want to lose your life along with your autonomy

Written by Alice Pattillo

Although there are continued disputes over the definition of the word 'cult', in modern usage the term is most often used to describe a group of people who devote themselves to a destructive religious, political or philosophical belief system, who often live communally and are led by a charismatic leader. These false prophets often warp already established religions and belief systems to suit their own sinister ends, whether that is for sexual gratification, financial gain or to satisfy their sadistic tendencies. They establish complete control over the group through manipulation, isolation, brainwashing tactics and even violent abuse. However, some leaders extend their command as far as murder...



The Peoples Temple

Perhaps one of the most infamous cults of the 20th century, thanks to its horrifying ending, the Peoples Temple began in the 1950s as a Pentecostal sect led by pastor Jim Jones. Jones garnered a huge audience as an evangelical preacher by promoting racial equality within his congregation at a time of segregation, as well as claiming healing abilities. But his intentions were not virtuous. After allegedly receiving visions of a nuclear attack on the US, he encouraged his followers to relocate to Guyana, where he established a 27,000-acre commune under the guise of a colony he dubbed Jonestown in 1975. By 1977, Jonestown housed over 1,000 followers and things had taken a dark turn.

Jones ruled as a God-like figure, took control of his congregation's bank accounts, stole their passports, beat them, forced them to work and manipulated them into having sex with him. After a television crew visited the site and helped 14 followers attempt to escape, Jones's brainwashed army retaliated, resulting in fatal shootings. Fearing the town was doomed, Jones told his devotees they must commit "mass revolutionary suicide" and administered cyanide-laced Flavor Aid fruit punch to his congregation at the main church building. Those who wouldn't "drink the Kool-Aid " (this incident is from which the term derives) were forcibly injected with poison. A staggering 913 dead bodies, a third of which were children, were discovered by Guyanese troops on 19 November 1978, including Jones – who had suffered a fatal bullet wound to the head.

Aum Shinrikyo

In March 1995, Japan saw its worst domestic terrorist attack. A doomsday cult known as Aum Shinrikyo (Supreme Truth) released the toxic compound sarin on three lines of the Tokyo Metro at rush hour, killing 13 people, severely – in some cases fatally – injuring 50 and causing temporary blindness for thousands more. The perpetrators had previously carried out similar attacks on smaller scales, masterminded by guru Shoko Asahara.

Asahara started the group in 1987, claiming he had reached nirvana and gained psychic powers. He began preaching to over 1,000 followers, declaring he was the Buddha, a reincarnation of Shiva and the Christ Messiah, setting up communities and promising followers they'd reach enlightenment. In 1989, Aum Shinrikyo was recognised as an official religion and membership grew – peaking at 60,000 worldwide by 1995. Asahara encouraged his followers to reject materialism and donate their money to him. Rumours began circulating of drug use, shock therapy, extortion and even murder. Asahara became obsessed with Biblical prophecies and introduced armageddon into his doctrine, shifting the group from a religious organisation to a militant one. He enlisted scientists to manufacture chemical weapons and plotted to overthrow the government. Following the Tokyo attack, authorities recovered enough sarin to kill four million people along with explosives, chemical weapons and a Russian military helicopter in possession of the cult. Asahara was sentenced to death and executed in 2018. Despite this, the group is still said to be active.

ABOVE LEFT
Victims of Jim Jones

LEFT
Asahara took cues from Buddhism and Christianity in order to form what would become a militant, terrorist organisation

© Getty Images

THE ANT HILL KIDS

Established in Quebec in 1977 by the excommunicated Seventh-day Adventist Roch Thériault, the Ant Hill Kids began as a commune that promoted equality, unity and encouraged a holistic, healthy lifestyle. However, Thériault quickly shifted from motivational leader into abusive dictator with an increasingly severe drinking problem. He banned followers from having any contact with their families, and prevented them from talking without him being present or having sex without his permission.

Thériault believed the world would end in 1979 and moved his followers to a remote mountain side, later relocating to Ontario in 1984. He dubbed his devotees the Ant Hill Kids as he watched them build their new commune like a struggling ant colony forming an ant hill. Thériault told his female members they were his wives and must bear his children. By the 1980s he had fathered over 20 kids with nine members of the commune, and made the women wear identical tunics.

Thériault's abuse continued to escalate. Any disobedience was met with punishments such as being beaten with a hammer or belt, being suspended from the ceiling, having body hairs plucked out or being defecated on. Thériault would 'purify' followers of their sins by beating them while nude and test their devotion by forcing them to break their own legs with sledgehammers, shoot each other, cut off each other's fingers and toes with wire cutters, sit on lit stoves, eat dead mice and faeces, and many other unimaginable violent acts. This physical and sexual abuse was even extended to his own children, who were eventually all taken away by authorities. After this, Thériault began claiming he was a holy being who could heal sickness. To demonstrate his powers he began performing botched operations with no anaesthetic to anyone who complained of any ailments.

In 1989, when follower Solange Boilard complained of a stomach ache, he laid her on a table, punched her in the stomach, performed a crude enema on her with a plastic tube filled with molasses and olive oil, cut open her abdomen, tore out parts of her intestines with his bare hands and had another one of his hareem stitch her up. Finally, he shoved a tube down her throat and forced some of his other female followers to blow into it. Unsurprisingly, Solange died the following day.

But Thériault wasn't finished – he claimed to have the power of resurrection. He drilled a hole into the dead woman's skull and he and his male followers ejaculated into the hole. When Solange failed to come back to life, Thériault removed one of her ribs to wear as a souvenir and they buried her near the commune. After this, Gabrielle Lavallée – who had herself suffered repeat mutilation and torture – managed to escape the commune and inform the authorities. After Thériault was captured, many of his followers still supported him, and his wives made conjugal visits until he finally met a suitably violent end at the hands of his cellmate.

THE MANSON FAMILY

After being released from jail in 1967, 32-year-old ex-pimp Charles Manson used the free-spirited San Francisco 'Summer of Love' to lure vulnerable young women into being his devoted disciples. Thanks to his manipulative charms, around 100 people fell under his spell within a year and he moved his extended 'family' to Los Angeles to rub shoulders with the rich and famous, prostituting his female disciples in hopes of getting himself a record deal.

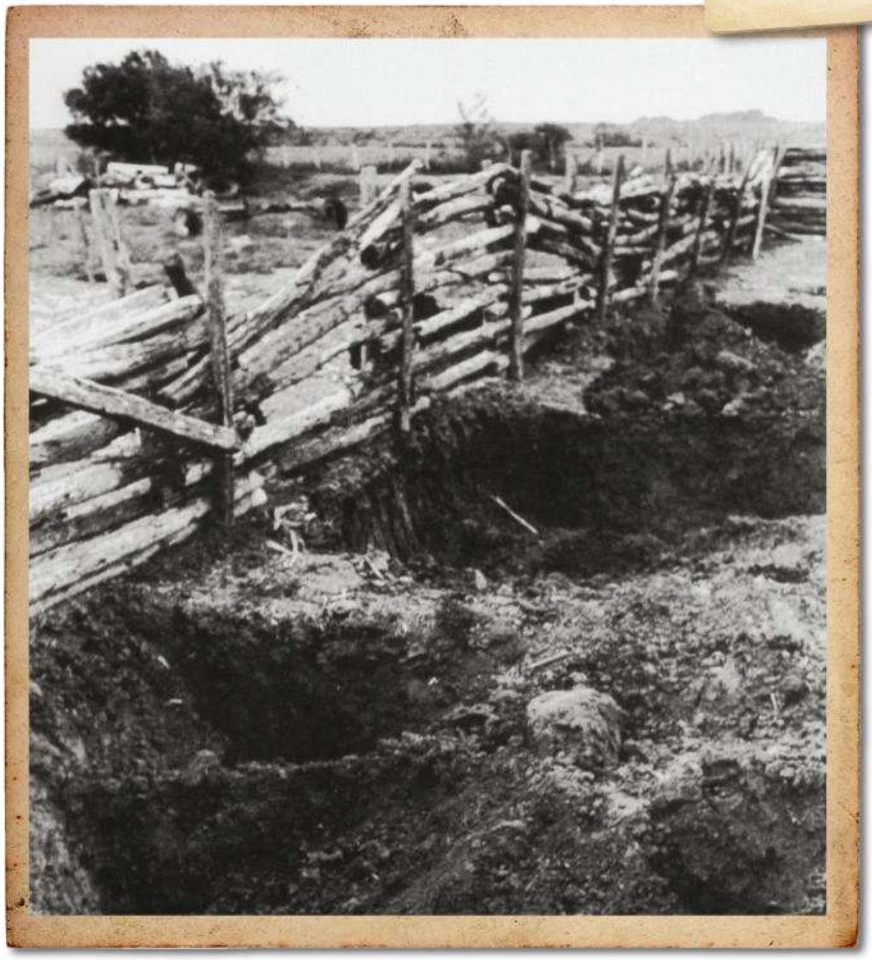
Manson used occult religion and philosophy to control women, convincing them he was both the Devil and Christ's second coming. He later commented from prison that he liked women "just as long as they keep their mouths shut and do what they are supposed to do. That is the extent of it. All this occult, hocus pocus [stuff] is a fairytale." However the horrors left behind by his followers' bloody murder spree in 1969 were like something ripped from the pages of Brothers Grimm.

Never getting his own hands dirty, he wielded his powers of persuasion to carry out operation Helter Skelter, beginning with the killing of a UCLA PhD student, Gary Hinman, when he wouldn't join his cult and turn over his money. Next he instigated the massacre at the home of film director Roman Polanski's pregnant wife, Sharon Tate. The actress was enjoying an evening with three friends when four of Manson's followers broke in and murdered them all, as well as an 18-year-old boy who happened to be visiting the property's caretaker, leaving the word 'Pig' scrawled on the door in Tate's blood. But that wasn't the end of it, the white supremacist Manson then accompanied six of his followers to kill a couple in Los Feliz with the intention of sparking a race war. Manson died in prison in 2017, age 83.

ABOVE
Although convicted as a serial killer, Manson didn't actually physically kill anyone, instead he manipulated his disciples to do so for him

BELOW
Constanzo's power was derived from a morbid cauldron filled with animal bones and human tissue

> "MANSON USED OCCULT RELIGION AND PHILOSOPHY TO CONTROL WOMEN"



NARCOSATANISTS

Satanic cults aren't as common as the movies would have you believe, but that doesn't mean they don't exist. Taking inspiration from the Afro-Cuban religion of Palo Mayombe, the Narcosatanists, led by Adolfo Constanzo, used evil magic to protect their drug operation across the border from Mexico to the USA, believing it made them immune to the eyes of the law. There was one catch, though. While Palo Mayombe usually requires sacrificial animals to be slaughtered, their carcasses added to a gruesome cauldron called a nganga with the belief that this magical pot captures their spirits to increase your power and do your bidding, Constanzo's form of magic required sacrifices of the human variety.

Constanzo demanded that his followers – a cartel of narcotics dealers – renounce God and devote themselves to Satan. He set up his nganga in a run-down shed in the desert near Matamoros, where he and his followers brutally sacrificed their victims and added various body parts to it. Each human sacrifice was picked for a particular physical attribute – for example a body builder was murdered for strength, his muscles added to the cauldron and mutilated corpse buried in an unmarked grave. Eventually, in 1989, Constanzo demanded the power from the brain of an American student, an act that would lead to his downfall. When springbreaker Mark Kilroy went missing, authorities were led to the chilling desert ranch and dug up 15 mutilated bodies. Rather than go to prison, Constanzo ordered one of his followers to shoot him. By the time he was discovered by authorities, he was dead. But that didn't stop them from charging 14 of his followers.

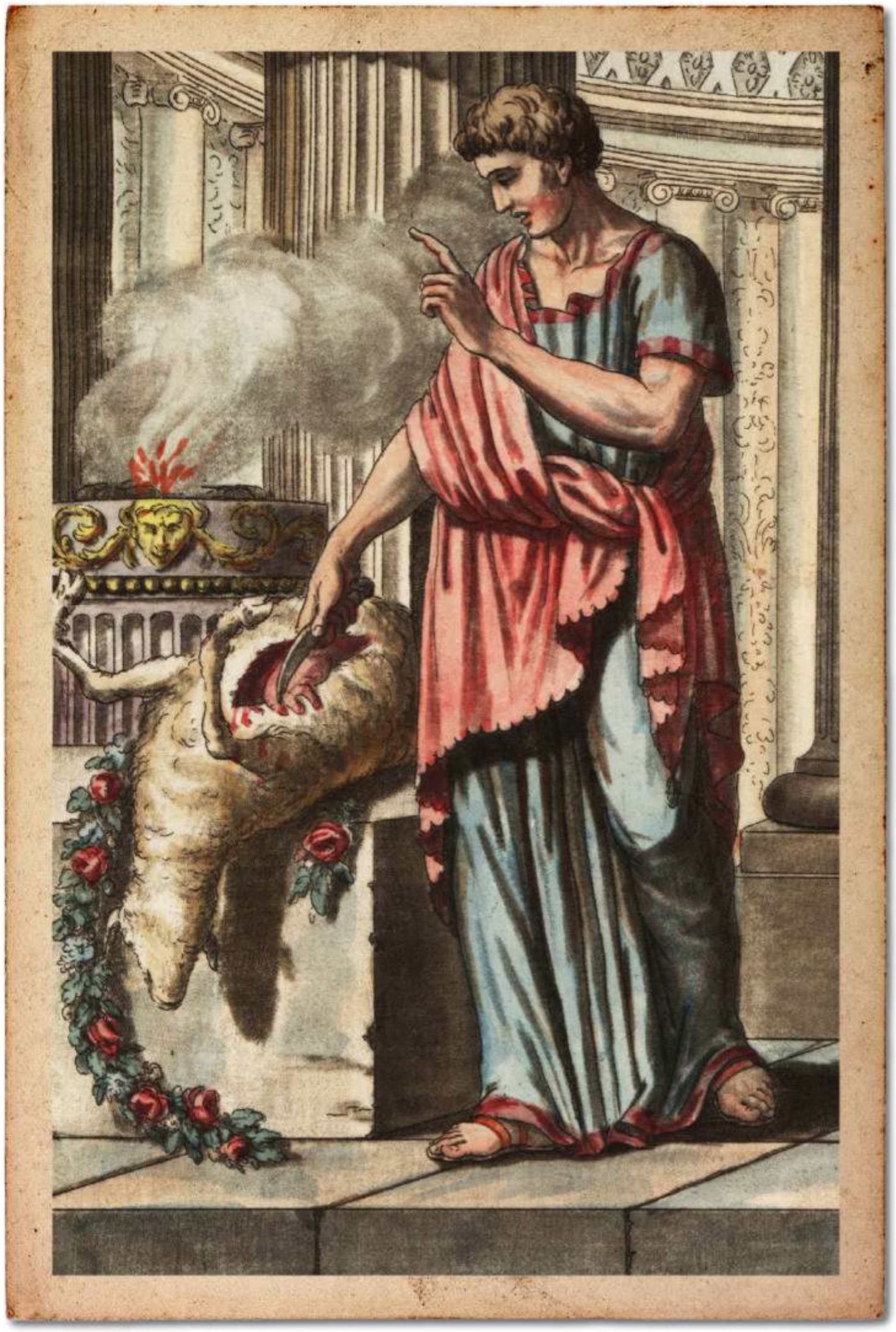
© Getty Images

The DARK ARTS

The occult sends shivers down the spine of some, but many elements of the mystic are simply misunderstood

Written by Alice Pattillo

The mysterious nature of the occult has been blamed for numerous social ills, continuing to attract bad press and instil fear into the hearts of God-fearing folks even today. In reality, however, the term occult - first recorded in the 15th century - is simply a verb meaning 'to conceal' and has nothing to do with evil. But as you will see here, many will have you believe that esoteric practices are connected to the Devil.



Esoteric Entrails

Some of the magical practices and rituals performed by occultists can prove bizarre, and even grisly. Haruspicy is a stomach-turning form of divination in which animal entrails are used to foretell the future. Back in ancient times, animal sacrifice was commonplace, and the Romans didn't shy away from gore and brutality – a typical day out with the family involved watching gladiators fight to the death – so it is no surprise that divination with blood and guts became such a popular pastime. Originating with the Etruscans, the practice involved ritually slaughtered livestock which, once killed, was examined in shape, size and colour by a specialised expert called a haruspex. The haruspex would pay special attention to any markings on the internal organs, particularly the liver, and charge people for his expertise, weighing up the positive and negative omens found upon the entrails and offering an answer of yes or no to their most burning questions. The animal's meat was then cooked and served up to feast upon – usually during festivities in celebration of the Sun god.

SATAN'S SIGIL

The pentagram, or pentacle, often gets bad press and is used as a sure sign of Satanic activity. However, the five-pointed star has ancient origins and has been used to honour a number of deities as well representing everything from charity and health to protection. During the Middle Ages, it was even used by Christians as a symbol for the five wounds of Christ and as a sign of the five virtues of knighthood: chivalry, piety, generosity, friendship and chastity. It was during the Renaissance that it began to be used as a magical symbol. A pentacle with a single point upwards was meant to represent the spirit presiding over the four elements of matter and was the correct, good way to depict the image. It was occultist Éliphas Lévi who attributed further occult meaning to an upside down orientation of the pentacle; he claimed that a reversed pentagram, with two points upwards, resembled a goat of lust and is a symbol of evil that attracts sinister forces.

ABOVE
Training as a haruspex would take years and they were highly revered for their skill

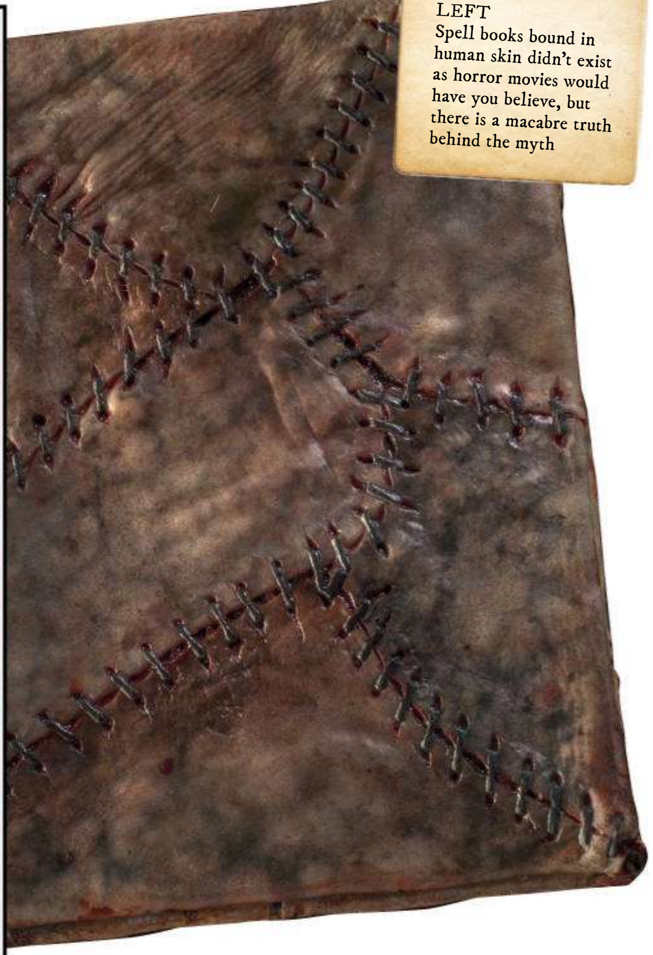
RIGHT
The inverted pentagram is said to attract sinister forces

© Getty; Alamy

THE TERROR OF TAROT

Like the talking board (see opposite), another occult tool that has picked up a reputation of being evil is the tarot. Beginning life as a simple pack of playing cards, the tarot developed into a game of destiny during the 18th century. Occultists began to ascribe meanings to each card from the deck and use them for cartomancy – divination with cards. A false history was conjured by these fortune tellers, claiming the cards had esoteric origins in ancient Egypt and Jewish mysticism and weren't just an ordinary game invented in the 1400s. Occultists soon began designing their own decks illustrated with alchemical symbols and hidden mystical meanings. Of course, the Church was appalled by this and rumours began circulating that have survived into the present day. Notions that the cards hold some demonic power, that even discussing the tarot can summon evil, or that if your neighbour owns a deck they curse the whole street remain rife with the uninitiated.

LEFT
The Rider-Waite deck was created by occultists within the magical Hermetic Order of the Golden Dawn and is still the most iconic version of the tarot



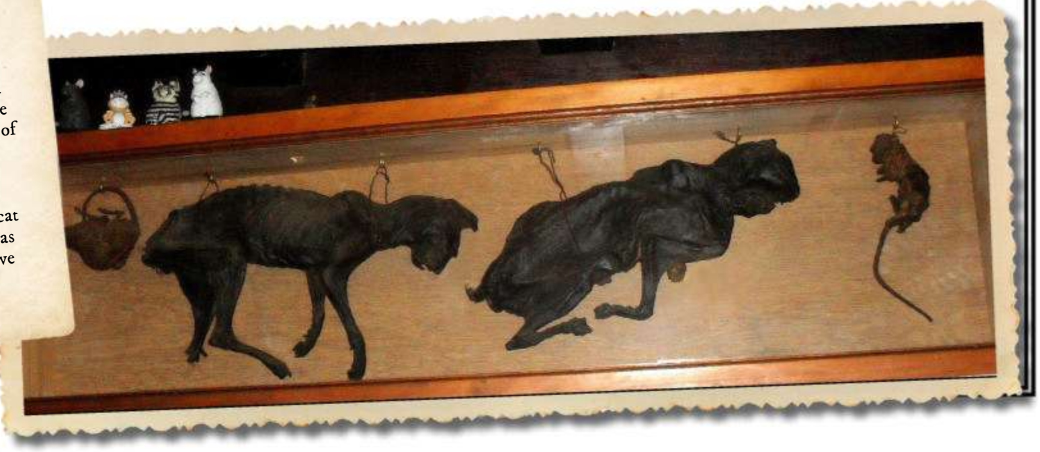
LEFT
Spell books bound in human skin didn't exist as horror movies would have you believe, but there is a macabre truth behind the myth

SKIN SWATHED SPELLBOOKS

It's not uncommon for books to be bound in animal leather, but what about human flesh? There are numerous fictional examples of grimoires bound in human skin, such as the Necronomicon Ex-Mortis of Sam Raimi's *Evil Dead* series and Winifred Sanderson's animated spellbook in Disney's *Hocus Pocus*, but while superstitions indicate that binding a book in the flesh of a human was a tradition associated with witchcraft, it was actually practiced by men of science. The custom, known as anthropodermic bibliopegy, was most often performed by medical doctors during the 19th century, using the skins of criminals. The most famous example of the practice is preserved at the Royal College of Surgeons of Edinburgh, and is a pocketbook bound with the flesh of infamous grave-robbing murderer William Burke, who was publicly dissected in 1829 following his execution, the date of which is stamped upon the cover. No grimoires have ever been discovered bound in human skin, but that doesn't mean they didn't exist. The most occult-adjacent flesh-bound books are copies of Hans Holbein's *Dance of Death*, an illustrated interpretation of the Medieval allegory, *Danse Macabre*, depicting the universal nature of death – rather morbid indeed!

PETRIFIED PUSSYCATS

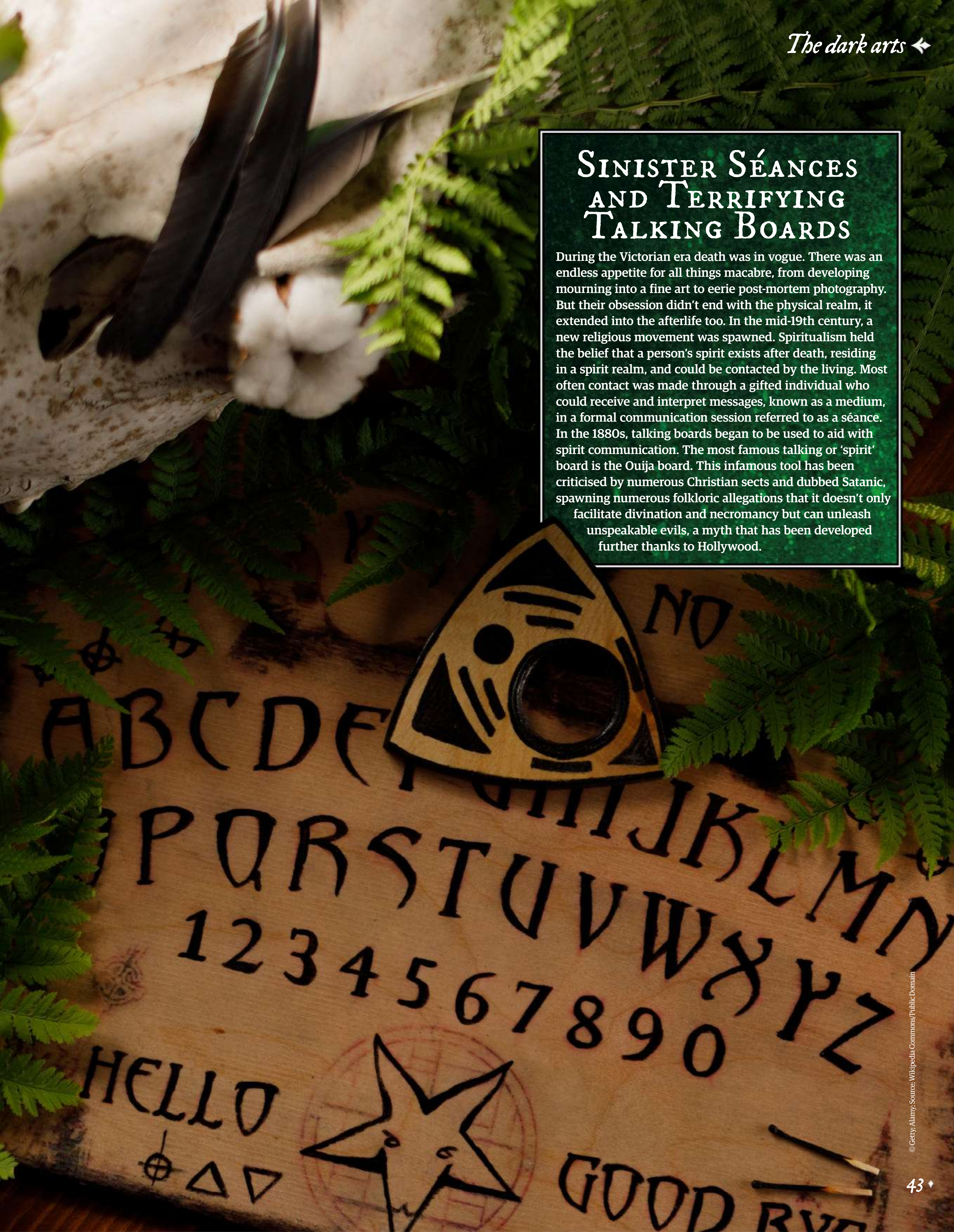
All across the United Kingdom, Northern Europe and occasionally North America, a curious, morbid object has been discovered by home renovators. Dried out corpses of cats are frequently found buried within the hollow walls of old houses, sometimes posed as if ready to defend themselves and other times accompanied by dried mice, rats or birds – perhaps offerings to accompany them into the afterlife. It is believed that these desiccated animals are part of a folk magic practice, purposely placed there after death in order to protect the household by warding off evil spirits and attracting good luck. In the early modern period, it was common to hide objects in the structures of buildings to counteract spells cast by witches and trap evil spirits. Other such objects that have been discovered include horse skulls, shoes, written charms and witch bottles – which could contain urine, nail clippings or hair of the perceived evil doer, red wine, earth, sea water, needles and pins and herbs. These were used by folk healers to counteract psychic attacks.



RIGHT
Concealing dried cat corpses in walls was a form of protective folk magic

SINISTER SÉANCES AND TERRIFYING TALKING BOARDS

During the Victorian era death was in vogue. There was an endless appetite for all things macabre, from developing mourning into a fine art to eerie post-mortem photography. But their obsession didn't end with the physical realm, it extended into the afterlife too. In the mid-19th century, a new religious movement was spawned. Spiritualism held the belief that a person's spirit exists after death, residing in a spirit realm, and could be contacted by the living. Most often contact was made through a gifted individual who could receive and interpret messages, known as a medium, in a formal communication session referred to as a séance. In the 1880s, talking boards began to be used to aid with spirit communication. The most famous talking or 'spirit' board is the Ouija board. This infamous tool has been criticised by numerous Christian sects and dubbed Satanic, spawning numerous folkloric allegations that it doesn't only facilitate divination and necromancy but can unleash unspeakable evils, a myth that has been developed further thanks to Hollywood.



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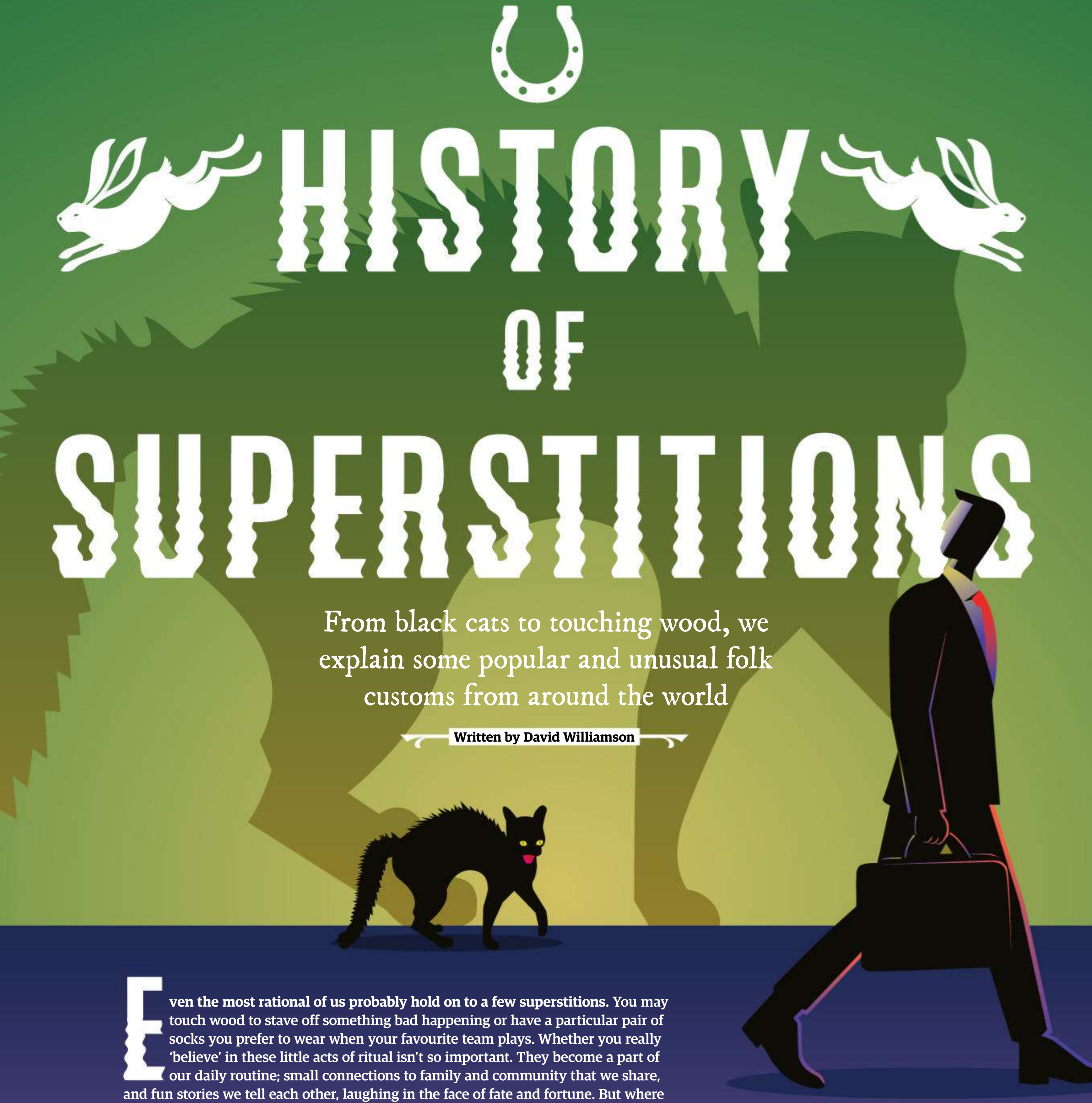
HISTORY OF SUPERSTITIONS



From black cats to touching wood, we explain some popular and unusual folk customs from around the world

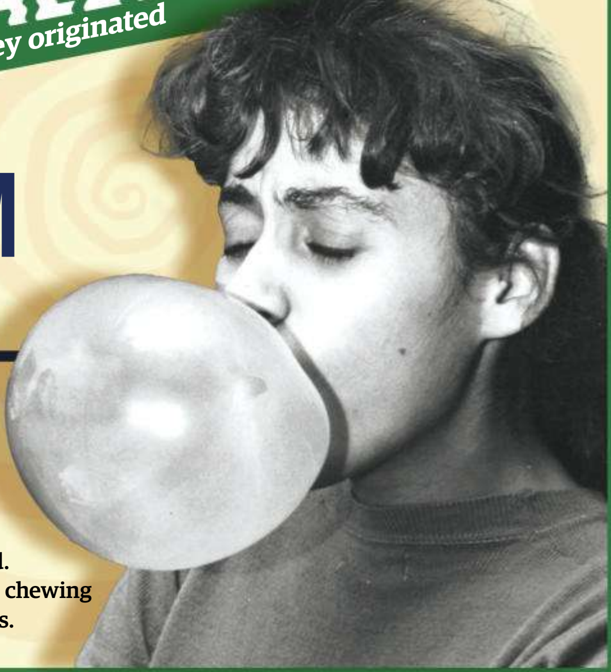
Written by David Williamson

Even the most rational of us probably hold on to a few superstitions. You may touch wood to stave off something bad happening or have a particular pair of socks you prefer to wear when your favourite team plays. Whether you really 'believe' in these little acts of ritual isn't so important. They become a part of our daily routine; small connections to family and community that we share, and fun stories we tell each other, laughing in the face of fate and fortune. But where did these odd superstitions originate? We hope to give you some insight here.

STRANGE TALES

Obscure superstitions and where they originated

CHEWING GUM AT NIGHT



This modern-day superstition comes from Turkey, where it is believed that to chew gum at night is a sure sign of bad luck. The Turkish believe that at night the gum transforms into the flesh of the dead and chewing it will bring horrendous repercussions from the spirit world. Curiously, a 1999 medical study suggested that chewing gum at night is a good way to relieve sleepiness.

SITTING AT THE CORNER OF THE TABLE

There are many traditions associated with weddings and marriage, such as 'something old, something new, something borrowed, something blue'; not seeing the bride the day before the wedding; and catching the bouquet. But what if you never get to the wedding day in the first place? In Russia and Hungary if an unmarried person (often a woman) finds themselves sitting alone at the corner of a table, then it's believed to be a sign that they will never marry. But there may be a sociological explanation for this: if you are on the edge of things and not in the middle of the conversation, then the chances of meeting your future love are drastically reduced!

ITCHY PALMS

Some superstitions appear in seemingly unconnected parts of the world. In South America, Turkey, Nigeria and Western Europe if your palm itches then it's thought to be a sign that money is coming your way. It's sometimes recommended you don't scratch the itch, but place your hand in your pocket so you keep the luck. This is often limited to the right palm, with the left palm itching indicating that you're about to lose money. One suggestion of its origin dates back to the Anglo-Saxons and a medical treatment of rubbing silver on diseased skin to cure it.

UNLUCKY NUMBER FOUR

Many people in China and Japan will avoid the number four because in their respective languages the words for 'four' and the word for 'death' are very similar in pronunciation. This is taken very seriously, with some buildings not having a fourth floor. It's even caused traffic issues in Beijing, as reported by *Bloomberg* in 2015. A congestion measure in the city restricted cars with license plates ending in different numbers on different days, but so few people drive cars ending in four that it becomes the worst day for traffic in the city. The number eight in China, on the other hand, is lucky because the Mandarin word is similar to a word meaning 'to prosper'.

三樓
3 F
二樓
2 F
1 F
一樓
G F
地下

BAD LUCK

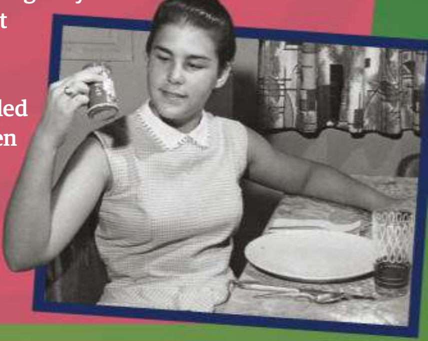
Things to avoid and why we avoid them

WALKING UNDER LADDERS

Sometimes superstitions have an element of common sense. Since you may have no idea who is up the ladder and what might fall on your head, there's a certain amount of practicality to this superstition. However, the superstition of not walking under a ladder leaning against a wall may have originated as a breaking of the magical triangle of the Holy Trinity, which for deeply religious cultures was more than enough to be doomed to eternal damnation. The ancient Egyptians also regarded the triangle as a shape to be revered as it had its own magical powers and ladders were climbed by the gods.

SPILLING SALT

A substance we take for granted now, for centuries salt was a valuable and sought-after luxury. Salt would change the flavour of food and would preserve valuable meat through long winters to keep your family alive, and as such it became a symbol of longevity and purity. For something so precious, it is not surprising that spilling it was considered bad luck. In Da Vinci's painting *The Last Supper* it is the traitor Judas who has spilled the salt. To ward off the bad luck, and even the Devil who was racing up behind you, it was imperative that you threw the salt over your shoulder to avert disaster. The Aztecs also believed that salt possessed 'godly' qualities.



FRIDAY 13TH

Friday
13
June

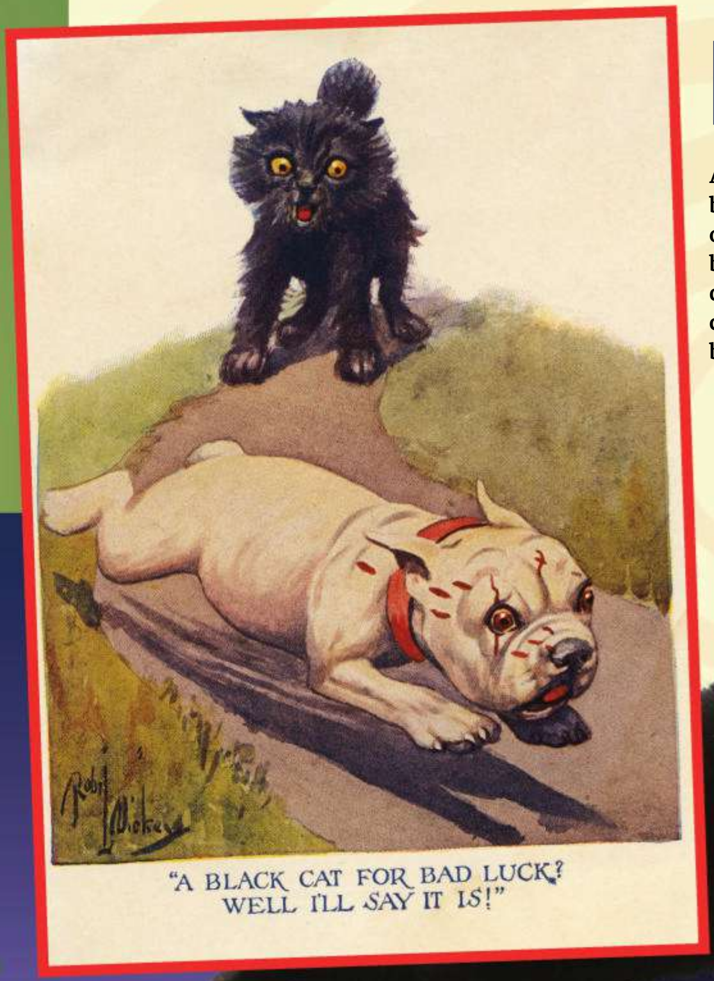
The number 13 is considered to be unlucky in a number of cultures. As with many superstitions the origins lie in more than one place. One possible association between the number 13 and bad luck is that at the Last Supper the traitor Judas was thought to be the 13th guest at the meal. However, many believe the fear of this dreaded date is linked to a true historical event. On Friday 13 October 1307, scores of French Knights Templar were rounded up by agents of King Philip, tortured and then put to death for heresy.

OPENING AN UMBRELLA INDOORS

Umbrellas are not always for rain - they can be for shade from the burning sun. And so it was for the Pharaohs of Ancient Egypt, who had the exclusive right to be shielded from the baking heat while their subjects fried. Opening a sunshade inside would offend the sun god. A slightly more modern interpretation suggests a belief that fairies and pixies might hide in upturned umbrellas and could be accidentally released in the home. A less glamorous yet more practical story behind the superstition comes from Victorian times, when opening a brolly inside could shower the room with raindrops and soak furniture and clothes; not to mention the possibility of injury to someone in the room as the metal spokes unfolded. Perhaps this superstition is just common sense!

BROKEN MIRROR

The mirror had an almost magical significance and was believed to be a reflection of the soul. To break this image was bringing on almost certain disaster because to lose your soul was the worst thing that could happen to you. Mirrors would have been incredibly expensive in certain eras, adding greater importance to protecting them. Mirrors were also strongly linked to the ability to see into the future or perform spells like scrying, which is a form of divination that involves staring into a reflective surface. If that surface was smashed, then of course the future looked bleak! It was the ancient Romans who added seven years of bad luck if you broke a mirror as they believed that was the time it took for the soul to heal itself.


"A BLACK CAT FOR BAD LUCK?
WELL I'LL SAY IT IS!"

BLACK CATS

A black cat crossing your path has long been seen as an omen of bad luck. Not only is black the colour of darkness, but also death and the Devil, and dating back to the medieval era black cats were commonly considered to be the familiars of witches or perhaps were witches themselves transformed into cats. It was also thought that a black cat was actually the Devil himself. So deep was this fear that black cats would sometimes be put to death, although killing a cat was also considered bad luck in some cultures.

GOOD LUCK

The never-ending search for blessings

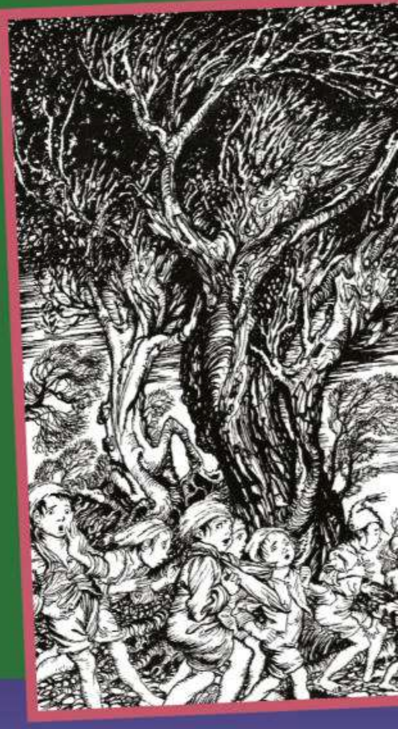
HORSESHOE ON THE DOOR

In a world before mechanisation a horse was an essential and valuable part of everyday life, and to own a horse was often a symbol of wealth. As a result, items associated with horses (even a picture of one) were considered positive. To nail a horseshoe to your door - especially pointing up so good luck could fall inside - was to bless your house with good fortune and ward off the evils of the Devil. Turn the horseshoe around the other way and it was an ancient symbol of the female vulva and would bring fertility to those who lived there.

FINGER CROSSING

Even if we believe we are not superstitious, many of us cannot help crossing our fingers, even in jest. It is a symbol of hope and in some cases a means by which we can say something we don't really mean and get away with it! It may have been a subtle greeting among early Christians, using the symbolic cross of Christ to remain secret and safe from persecution. Another possibility is that it derived from archers during the Hundred Years' War, crossing their fingers in the sign of the cross for luck as they drew their bows.

KNOCKING ON WOOD



Religion once again plays a major part in this particular superstition, but interestingly it could have either a pagan or Christian root to its meaning. In Britain the tradition is to 'touch wood' rather than knock, and this may have its origins in the pagan belief that trees held spirits that could be used for healing or for bringing good fortune. Trees would be touched in order to communicate with the spirits and tap into their mysterious powers.

SAYING BLESS YOU

Saying 'bless you' or 'gesundheit' (meaning 'health') to someone when they sneeze is a common act of politeness in much of the world. One theory of its origin lies in the Black Death, which ravaged Europe during the Middle Ages. A cold was a symptom of the plague and so to bless someone after a sneeze was a way of hoping – rather against the odds – that the disease would not take their life. Another theory, however, is much more ancient and is the belief that to sneeze was to release a part of your soul, which could then be captured by the Devil, and to say 'bless you' was the hope that you would not then come to any harm. The custom appears to go back at least as far as ancient Rome, with Pliny the Elder referencing it in his *Natural History* in 77 CE.

RABBIT'S FOOT

A very common example of what could be seen as a 'lucky charm', a rabbit's foot might be placed in an infant's cradle to ward off evil spirits. The concept of the lucky rabbit's foot appears to have been popularised in America, based on earlier histories that claimed it had medicinal benefits to protect against colic or gout. Samuel Pepys carried a hare's foot, supposedly to cure his abdominal pain. There was also a medieval belief that rabbits had the power of second sight and could warn against approaching evil.

HOW SUPERSTITIOUS ARE WE REALLY?

Can science tell if we are not superstitious or we just don't want to admit it?

Scientists and researchers have tried to get to the bottom of our superstitious beliefs, with some surprising results. In 2003, Professor Richard Wiseman of the Psychology Department of Hertfordshire University, in a survey of 2,068 people, found the levels of belief to be surprisingly high, even among those with a scientific background. Overall, 77 percent of respondents said they were a little or quite superstitious, with 42 percent saying they were very superstitious. From the survey results he and his team were able to rank the belief in specific superstitions as follows:

TOUCH WOOD	FINGERS CROSSED
74%	65%
AVOID LADDERS	SMASHED MIRRORS
50%	39%
LUCKY CHARMS	NUMBER 13
28%	26%

It was also clear from the survey that there were regional variations as to levels of belief for certain superstitions. In contrast to this, a 1996 Gallup Poll showed that only 25 percent of Americans regarded themselves as superstitious, and this figure dropped as people got older.

All images: © Getty

Deadly FASHION

If looks could kill, these fashion trends saw their followers pay the ultimate price

Written by Emma Slattery Williams

Staying on trend with the latest fashion is not just a modern concern – we have been trying to look our best and beat the rest almost since time began. This obsession with the cutting edge of style, however, has often come at a cost. From broken bones and fainting to disfigurement and ultimately death, these fatal fashion fads demonstrate how far some of our ancestors would go in search of style.

All images: © Getty Images

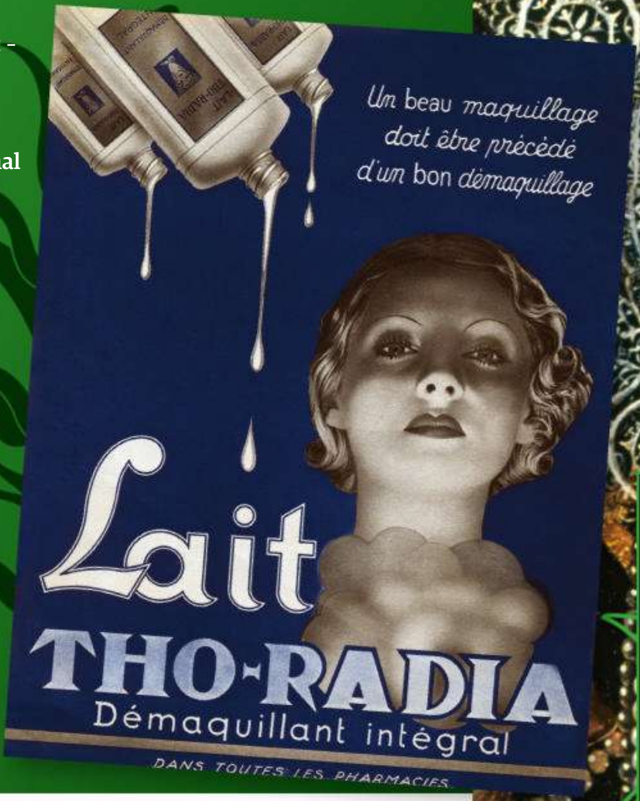
Radioactive cosmetics

LATE 19TH-EARLY 20TH CENTURY

Once radium was discovered in 1898, various uses for it were suggested including cosmetics. The likes of perfumes, toothpaste, lipsticks and creams containing radium and thorium chloride became especially popular in France.

Before the dangers of being exposed to radiation were fully understood, many believed it contained energy that could be anti-ageing or give a glowing complexion to the skin. The craze of radioactivity even led to some products claiming to be radioactive when they weren't - just to join in with the hype.

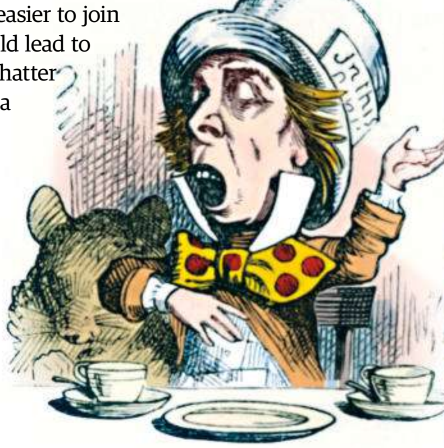
Rather than rejuvenate the skin, these harmful potions would lead to vomiting, internal bleeding and eventually cancer. Thankfully, the majority of people who used radioactive cosmetics didn't consume them to toxic levels, but American socialite and amateur golfer Eben Byers wasn't so lucky. After suffering an arm injury, a doctor prescribed him Radithor - a tonic made of radium dissolved in water. Initially he thought the drinks made him feel energised but after consuming around 1,400 doses his teeth began to fall out and eventually his jaw came away. He died in 1932 due to multiple cancers.

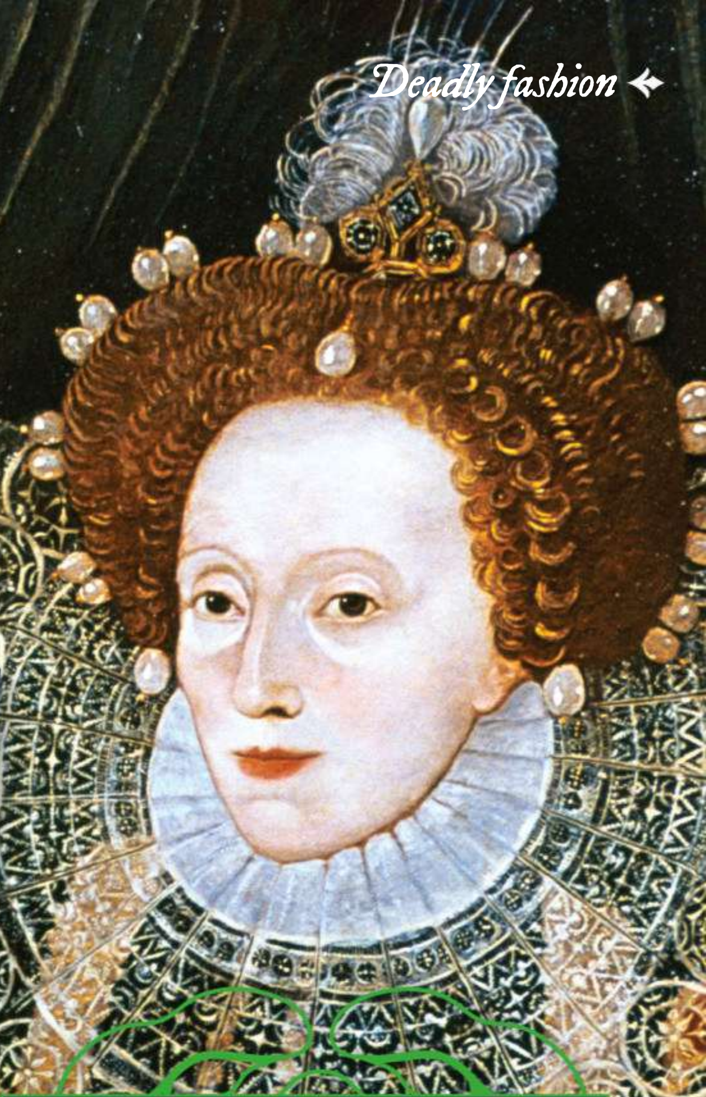


Mercury in hats

18TH-19TH CENTURY

It wasn't just those who partook in the latest fashion trends that could be at risk. Sometimes those who made the clothing could fall victim too. During the manufacturing of felt and fur hats - popular in the 18th and 19th centuries - mercury was an unfortunate ingredient. It was discovered that mercury made the hairs more pliable and easier to join together. Prolonged exposure could lead to poisoning and the so-called mad hatter disease - hence the term 'mad as a hatter'. Nasty symptoms included tremors, headaches, personality changes and diminished brain function. This horrible condition is thought to have been the inspiration for the character of the Mad Hatter in Lewis Carroll's *Alice's Adventures In Wonderland*.





Lead make-up

ANTIQUITY – 19TH CENTURY

Today, many of us are desperate for a sun-kissed glow, but in years gone by being pale was the desired look. A pale complexion was a status symbol and indicated that the person was of a higher class, while being tanned implied you were probably out in the fields labouring and therefore of a lower class. Between the 16th and 19th centuries, red rouged cheeks were added to the trend. To achieve this, lead paint was often used in cosmetics, which would whiten the skin and was also known as Venetian Ceruse. As far back as the ancient Romans, Egyptians and Greeks cosmetics containing lead were favoured in order to whiten the complexion.

Regular use could cause toxic levels of lead to enter the body and result in muscle paralysis and abdominal pain as well as intellectual impairment. What made this makeup even more deadly was that the lead in Venetian Ceruse could cause blemishes, hair loss and scarring on the skin so users would then apply even more to cover this up.

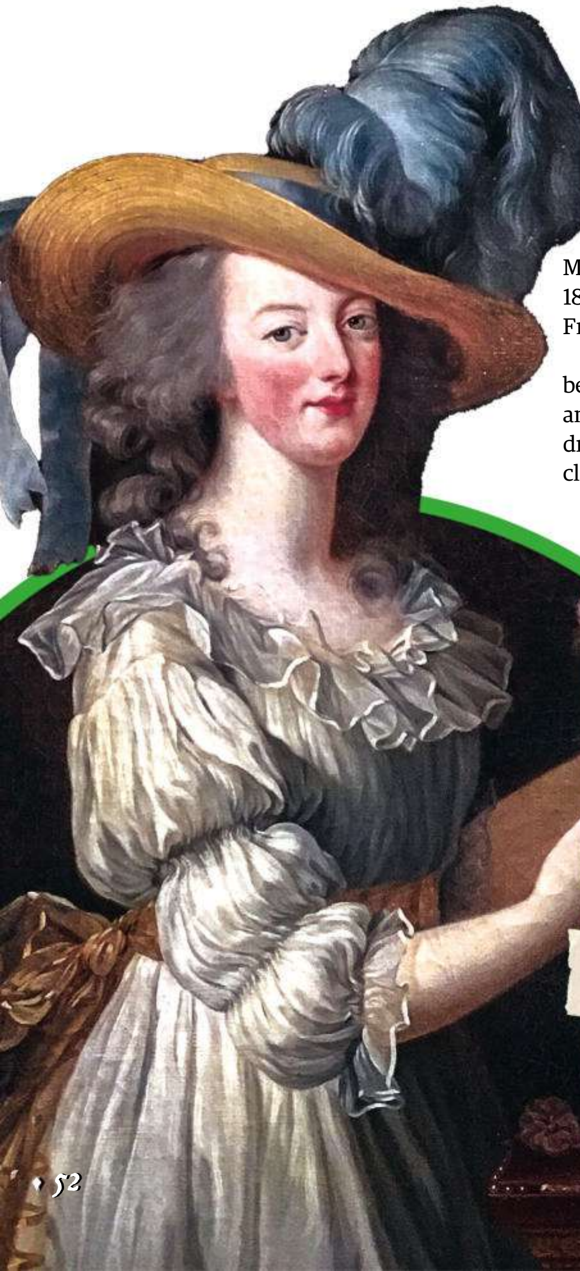
A tragic death caused by this dangerous concoction was that of Countess Maria Coventry. A famed society beauty during the reign of George II, Maria Coventry died at just 27 of lead poisoning, due to the Venetian Ceruse she was so fond of.

Elizabeth I was another famous fan of lead makeup and was seen in many portraits with a pale complexion, and potentially used Venetian Ceruse to cover scars left by smallpox.

Stiff shirt collars

19TH CENTURY

While women have often been the victims of dangerous fashion trends, men didn't always escape unscathed either. Detachable collars, fastened to the shirt with studs, became popular during the Victorian period and starch was used to stiffen them. This is where the danger crept in. Germans called them *vatermorder* (father killer) collars as they could cut off the blood supply to the carotid artery, which supplies oxygen to the brain, and essentially suffocate the wearer. During the day this could be felt and remedied easily enough, but a few glasses of wine and a comfy chair by the fire was all that was needed to fall asleep still dressed. The back of the stiff collar would cause the men to sleep with their heads tilted forwards and potentially choke them to death as a result. Even outside of this, the choking collar could cause a brain abscess or cut the throat itself with its sharp corners.

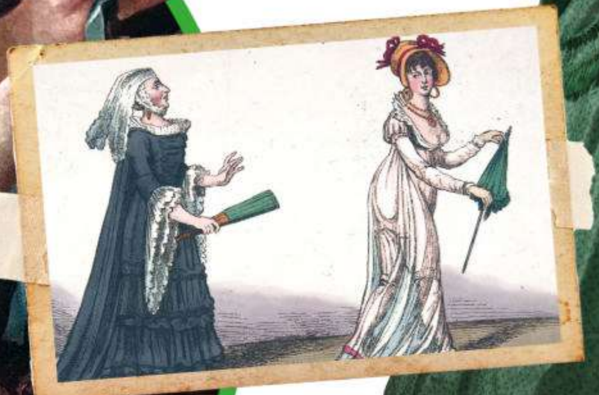


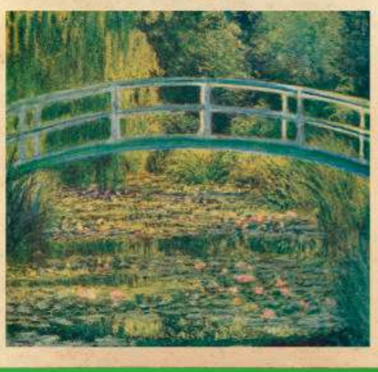
Wet muslin dresses

18TH-19TH CENTURY

Muslin and cotton dresses became all the rage in the 18th and 19th centuries, especially after being worn by French queen and fashion aficionado Marie Antoinette.

After the fall of the French monarchy, cotton dresses became seen as the material of the common people and everyone wanted to be seen in these thin, flimsy dresses – whatever the weather. Getting wet in such clingy material was not greatly advised, however. This chilly trend could cause pneumonia and, in some cases, even death. It's been suggested some women even dampened the dresses on purpose, but this claim could be a popular myth. Illness related to such clothing was dubbed the muslin disease.





Toxic green die

19TH CENTURY

Paris Green or another variant known as Scheele's Green were beloved pigments of the Victorians. Used in paintings by Claude Monet, as well as in wallpaper, it was valued for its deep emerald colour. Soon women were flocking to have dresses made in this colour as it lasted longer than other similar shades – making onlookers green with envy.

Alas, this popular colour was achieved by mixing copper with high levels of arsenic meaning it was highly toxic. Vomiting, skin lesions and cancer could all result and women weren't aware that it was their dresses that were making them ill.

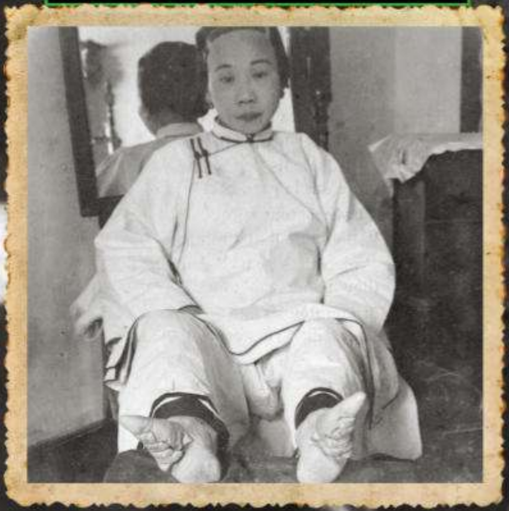
Image source: wiki/Met Museum/Catharine Breyer Van Bomel Foundation Fund, 1980

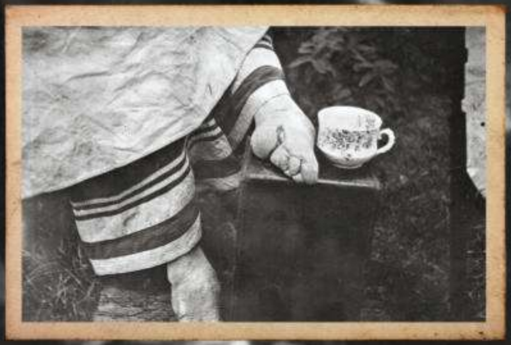
Foot binding

10TH-20TH CENTURY

Thought to have been inspired by a 10th-century Chinese court dancer with particularly dainty feet, children in China between the ages of four to nine would have their feet bound. This involved the feet being tightly bandaged with the smaller toes tucked underneath the foot to achieve a small and pointed shape. Over time this would often break bones in the feet to achieve the desired effect. As well as excruciating pain and problems walking in later life, fatal infections could also occur.

Foot binding prevailed for so long as it was seen as a status symbol and the epitome of feminine beauty, but the practice was eventually banned in China in 1912 - although it continued in secret for some decades later. It could be argued that wearing sky-high stilettos today shows that some people will still endure some level of pain and discomfort to be fashionable.





The Hobble skirt

EARLY 20TH CENTURY

These unusual skirts had an extremely narrow hem in order to prevent the wearer's stride being too wide. Briefly popular during the early 20th century, they severely hindered how the wearer could walk but were thought to make them appear more graceful. It's believed that this quirky trend was inspired by Edith Ogilby Berg - the first female American woman to be a passenger on a flight when she accompanied aviation pioneer Wilbur Wright in 1908. Berg tied a rope around her dress so it wouldn't blow around in the wind and this caught the eye of a French designer.

Interestingly, women at this time were rebelling against societal norms. They were becoming more physically active and the suffrage movement was gaining momentum, so this trend could have been a potential attempt to subdue them. The difficulty walking that hobble skirts posed led to the railway in New York creating streetcars with no step so the wearers could board them easier.

Many deaths were reported due to the restrictive nature of hobble skirts such as women stumbling off bridges and not being able to quickly move out of the way of traffic or horses. Unsurprisingly, they fell out of fashion, especially with the onset of World War I. Hobble skirts were not considered conducive to the war effort.

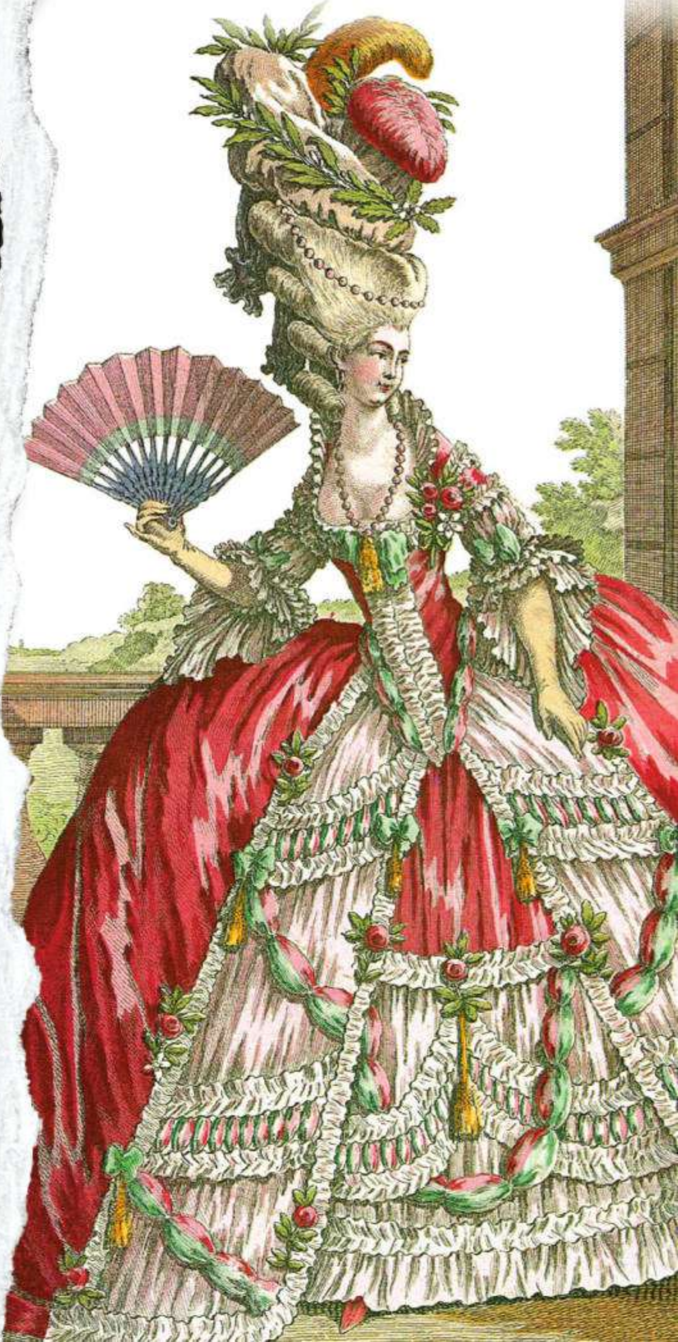
All images © Getty; Alamy

Fontange and Pouf

17TH-18TH CENTURY

Having the highest, largest and most outrageous head of hair was all the rage in the French court. A pouf - an elaborate hairstyle using a wire frame, pillow as well as false hair - was often covered in animal fat to keep it in shape. They could remain in place for up to two weeks and attract vermin such as rats to scurry in and out of the coiffures.

The fontange on the other hand was an elaborate lace hairpiece with ribbons held by a wire frame that made it very difficult to move. They were also prone to catching on fire. As they became larger and more elaborate, more pins were needed to keep it in place which could be deadly to both the wearer and those around them.

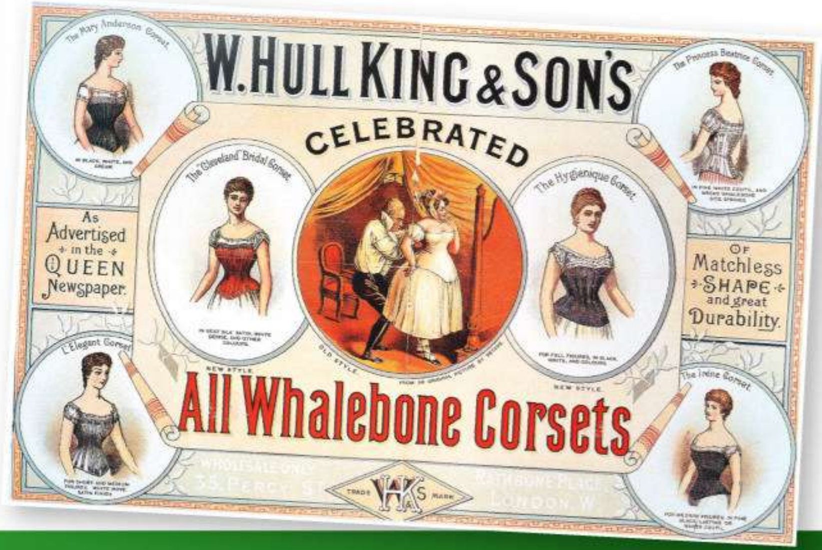


Corsets

17TH-20TH CENTURY

The corset is one of those items from a woman's wardrobe that instantly transports you to an earlier age. Between the 17th and early 20th centuries, the corset was a key part of a woman's attire and consisted of a tightly fitted bodice with boning made of wood, bone and later metal. It created the feminine v-shaped silhouette that was considered the ideal at the time as well as preventing slouching. The corset is also thought to have inspired the term 'straitlaced' – women who wore them were expected to uphold the model moral behaviours of the day, the corset effectively controlling a woman's body physically and socially. Those who did not wear one however were considered 'loose' in more ways than one.

It's clear that if a corset was laced too tightly it would cause discomfort and difficulties in breathing. Constant use of a corset could put increasing pressure on the internal organs and even force them to move position. Women were reported to faint due to constriction and corsets were blamed for many deaths and illnesses. There was one report of a woman who died of an apparent seizure – during the post-mortem, pieces of corset steel totalling eight inches were found to have pierced her heart.


The Mary Anderson Corset
W.HULL KING & SON'S
CELEBRATED
The Princess Beatrice Corset
The 'Cleveland' Bridal Corset
The Hygienique Corset
As Advertised in the QUEEN Newspaper
Of Matchless Shape and great Durability
L'Elegant Corset
New Style
The Irene Corset
All Whalebone Corsets
Wholesale only 35, Percy St
Rathbone Place London W.
Trade WHKS Mark

Belladonna eye drops

19TH CENTURY

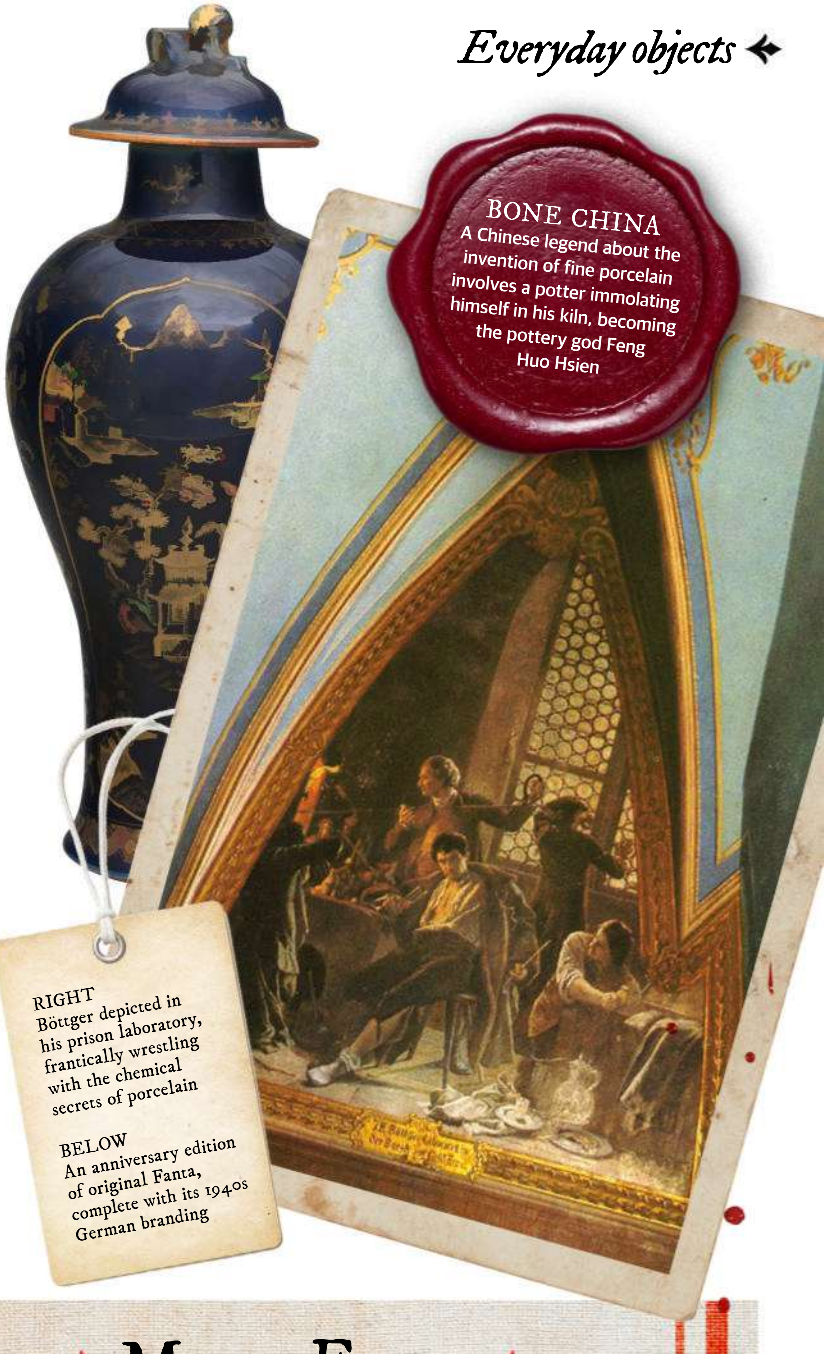
Large pupils were another attractive feature that Victorian women strove for as this was thought to look seductive. This has been tied to looking like you're suffering from consumption, with pale skin and watery eyes. This rather specific and disturbing trend led to some women literally putting poison into their eyes. Belladonna (also known as deadly nightshade, which should have been a clue) was used in eye drops and would sometimes be used to dilate the pupils. Some would turn to citrus juices to do the same job, but belladonna would last much longer. Lesser symptoms could include dry mouth, slurred speech, light sensitivity and flushed skin, but could lead to hallucinations, memory loss, blindness and ultimately death. A high price to pay for 'beauty'.

The DARK HISTORY of EVERYDAY OBJECTS

Many familiar household brands, devices and names have a darker tale to tell. Here are just some of them

Written by April Madden

History is littered with dark and twisted objects. Blood diamonds, ducking stools and arsenic-laced wallpaper are some of the most famous, but did you know that many items we take for granted today also have unfortunate, gruesome or macabre backstories? Here are some surprisingly morbid everyday objects.



BONE CHINA

A Chinese legend about the invention of fine porcelain involves a potter immolating himself in his kiln, becoming the pottery god Feng Huo Hsien

RIGHT
Böttger depicted in his prison laboratory, frantically wrestling with the chemical secrets of porcelain

BELOW
An anniversary edition of original Fanta, complete with its 1940s German branding

Break out the good china

Try as they might, the brilliant minds of Enlightenment Europe could not recreate the airy lightness of Chinese porcelain. European pottery – even the iconic Delftware – was heavy, rustic earthenware, suitable only for peasants.

Johann Friedrich Böttger was an alchemist-charlatan who scammed money from those same peasants by faking displays of turning base metals into gold. They weren't the only ones who believed in his supposed prowess – Böttger was taken into custody, first by Frederick I of Prussia, and then, on his escape from the Prussian king, by Augustus II of Poland. Augustus had also co-opted the services of German scientist Ehrenfried von Tschirnhaus, and the two were ordered to investigate not the transmutation of gold, but how the Chinese concocted porcelain, which fetched incredibly high prices in Europe at the time. They created a lighter and more pleasing version of European pottery up until Tschirnhaus died in 1708, a wealthy and powerful man. The next year the unfortunate Böttger informed Augustus that he had finally created proper porcelain. He was technically rewarded with his freedom but also appointed head of the first European porcelain factory, the famous MEISSEN pottery – a lucrative job, but one he couldn't refuse.

Fanta
KLASSIK
Fanta
KLASSIK

More Fanta less SS

Its slogan may exhort you to be less serious but the orange soft drink's history is hardly a barrel of laughs. In 1940 the USA enacted a trade embargo against Nazi Germany, which prevented the German Coca-Cola factory from accessing the syrup it needed to make Coke. Undeterred, the head of Coca-Cola GmbH decided to create a new fizzy drink, using ingredients only available in Germany at the time. Concocted out of sugar beet, whey, and the remnants from apple pressing, the new brew was named Fanta, from the German 'fantasie' or 'imagination'.

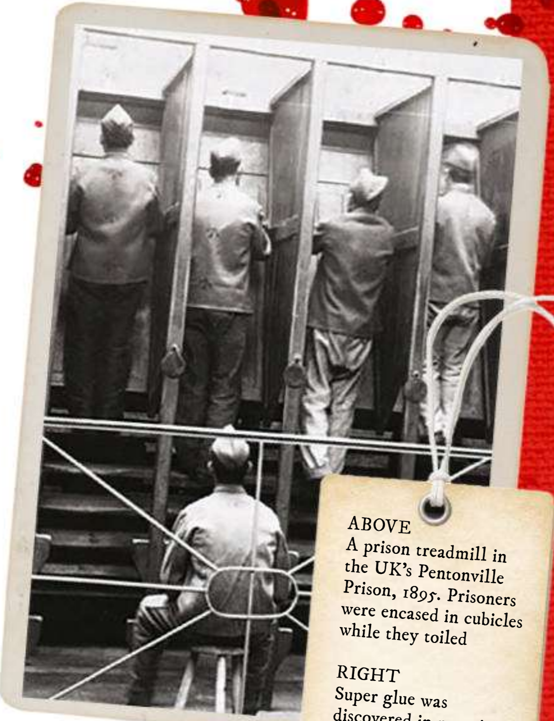
Coca-Cola GmbH was cut off from its American parent company after the Japanese attack on Pearl Harbor in 1941 brought the US into World War II. When the Coca-Cola Company regained control of the plant, it became the owner of this new and unexpected brand. Fanta was relaunched in Italy in 1955, reformulated with oranges, and is now enjoyed around the world in a variety of flavours. However, an anniversary edition of the original German apple pop was controversial for its 'Good Old Times' slogan, which many thought alluded to its Nazi heritage.

© Getty; Alamy; Source: Wikipedia Commons/Brück & Sohn Kunstverlag Meißen

LEG DAY LAGS

If you view your gym's treadmill as torture, you're not entirely wrong. While treadmills were originally a method of grinding grain and relied mainly on animal labour, in 1818 a British engineer called William Cubitt adapted this ancient design for use in prisons.

Victorian ideas about wrongdoers were brutally punitive, and Cubitt had visited a prison and been incensed by the sight of inmates doing nothing. He was determined to create a device to change that. His 'everlasting staircase' saw prisoners slog away on a primitive step machine for six hours a day, in total silence, each enclosed in a narrow cubicle to prevent them talking to – or even seeing – their fellow inmates. It wasn't just male prisoners either; Charles Dickens' novel *Bleak House* contains a reference to women being punished in this way, and Dickens had more experience than most authors at the time of the Victorian penal system.



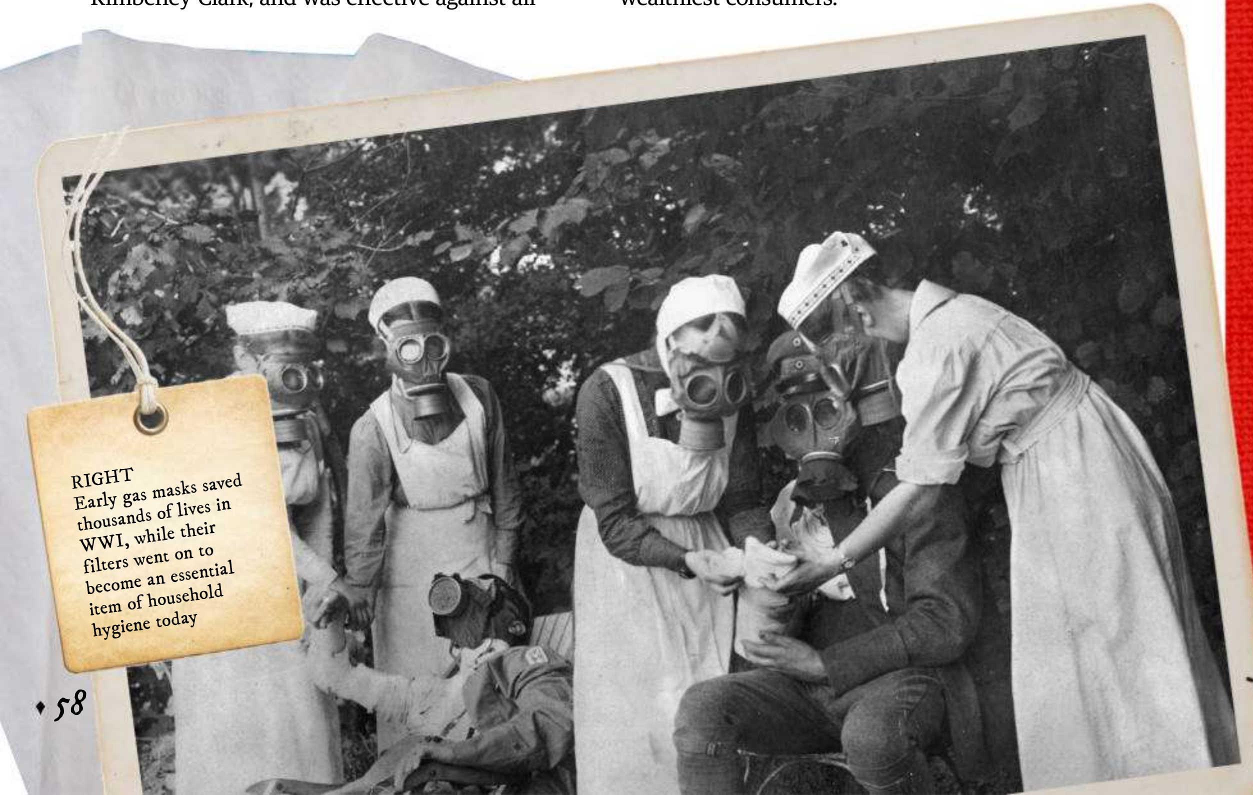
ABOVE
A prison treadmill in the UK's Pentonville Prison, 1895. Prisoners were encased in cubicles while they toiled

MAN-SIZE TISSUES

In April 1915, Imperial Germany launched a terrible new weapon onto the battlefields of World War I. They released yellow-green clouds of poison gas, which attacked soldiers' lungs and essentially drowned them with their own pulmonary fluid. Troops attempted to remedy the situation by placing damp cloth or cotton pads over their noses and mouths, a technique used in smoky environments for thousands of years. However, it did little good.

In 1916 the Allied Powers introduced the small box respirator, a portable gas mask designed by the British. It used a disposable filter made of crepe paper developed by American company Kimberley-Clark, and was effective against all kinds of gas warfare except mustard gas, which attacks the skin as well as the lungs.

In the 1920s Kimberley-Clark repurposed their soft crepe paper technology into gentle makeup-removing wipes to be used with cold cream cleanser. Then in 1929, a Kimberley-Clark researcher was suffering from hay fever when he desperately began to use the wipes instead of his soaked pocket handkerchief. They were taken to market as Kleenex, and customers flocked to the idea of using disposable tissues, instead of enduring the grim task of cleaning respiratory fluids out of cotton hankies at a time when electric washing machines were only available to the wealthiest consumers.



RIGHT
Early gas masks saved thousands of lives in WWI, while their filters went on to become an essential item of household hygiene today

GLUED MORNING VIETNAM

In World War II an American chemist called Harry Coover was looking into ways of making clear plastic gun sights. He was investigating chemicals called cyanoacrylates, but put them aside as they were too sticky. In 1951, now working at Eastman Kodak and still tinkering with high-performance clear plastics – this time heat-resistant polymers for fighter jet canopies – he picked up the super-sticky substance again. When an incredibly expensive piece of lab equipment was damaged by having its constituent parts stuck together, he realised that he was onto something.

In 1955 the US became embroiled in the Vietnam War, a conflict that for nearly 20 years saw many young American conscripts horribly maimed in combat. It was discovered that a spray made from Coover's mystery substance could temporarily close wounds, even those to arteries and internal organs, and prevent severe blood loss long enough for soldiers to be medically evacuated to field hospitals for surgery. In 1958 Eastman Kodak began marketing Coover's lifesaving adhesive as Super Glue, before selling the brand to Loctite in the 1960s.

BOLT
Cyanoacrylate
SUPER GLUE
MEDIUM
BOLT 321

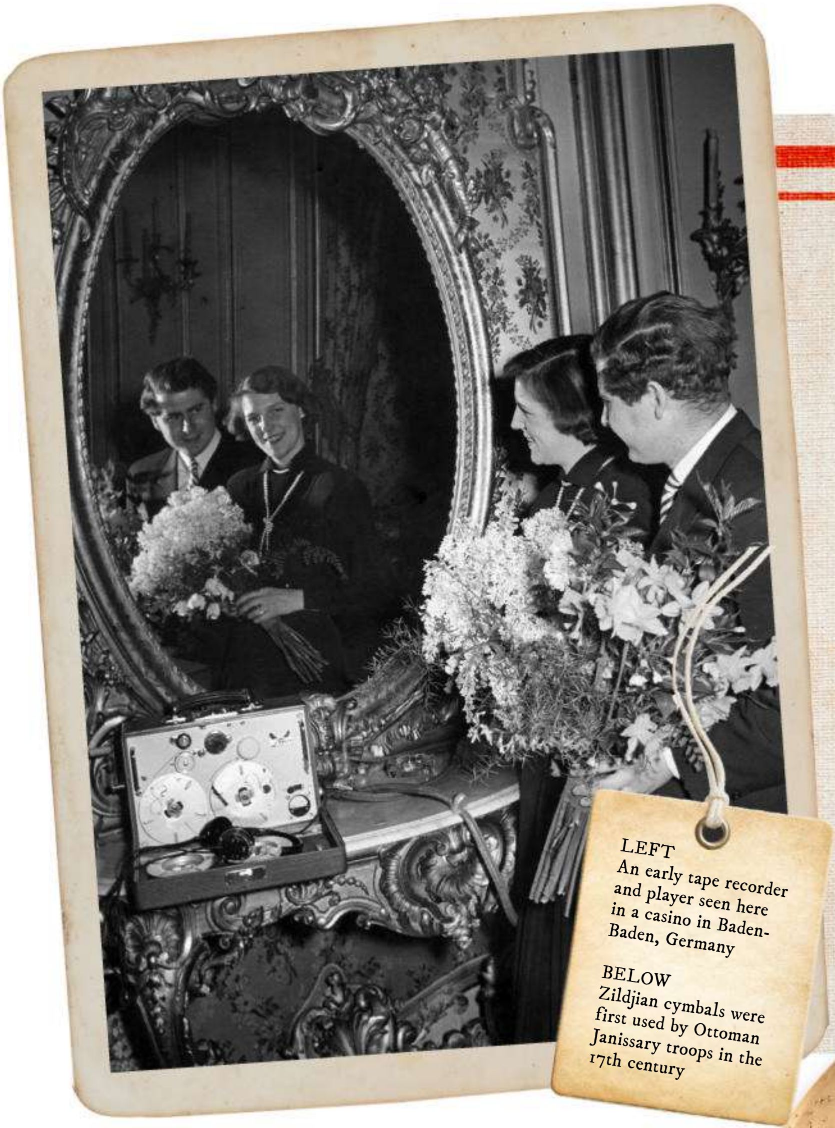
RIGHT
Super glue was discovered in pursuit of plastics for gun sights and fighter jet canopies, and was originally used to stop severe bleeding

© Getty; Alamy;

UNKIND REWIND

In the late 1920s, German engineers began experimenting with new forms of audio recording. Louis Blattner created a device called the Blattnerphone that recorded audio onto steel tape. The BBC had one; they thought it was useful for recording speeches for playback on radio broadcasts, but not good enough for music, and used it into the 1930s.

Despite this, the Allies were perplexed at the outbreak of World War II by the German broadcasts they had intercepted. They could guess from what they heard that the Nazis had some new form of recording that offered better sound quality and duration, enabling them to spread their propaganda widely and effectively, but not what it was. It was only at the end of the war, when Allied nations snatched up Axis technologies as part of Operation Paperclip, that they discovered the magnetic paper tape invented by Fritz Pfleumer in 1928. This made sound recording cheaper, more portable, and easily reproducible. Audio, video and data cassette tapes fuelled the music, movie and computing industries for decades, made recording technologies available to all, and created the Sony Walkman boom of the 1980s that would later influence the development of portable games consoles, music players, and eventually the smartphone.



LEFT
An early tape recorder and player seen here in a casino in Baden-Baden, Germany

BELOW
Zildjian cymbals were first used by Ottoman Janissary troops in the 17th century

BA-BOOM TSSH

Janissaries were the elite soldiers of the Ottoman Empire. Their enlistment was brutal: the Muslim Ottomans applied a levy to their Christian conquests – essentially a tax paid in children's lives. Boys were taken from their families in their teens (sometimes as young as ten) and enslaved into a military regime. If they survived this and their years of combat, however, they became wealthy members of the ruling classes in later life.

The Janissaries were some of the first troops to adopt firearms, but some of their other warfare techniques were distinctly old-fashioned. Not only did they march to music, they used it in battle, making use of wailing trumpets, woodwind, and pounding percussion, to confuse and terrify trapped or besieged foes. But they weren't the only ones: the drummer on your favourite tunes is likely using their cymbals. The oldest musical instrument manufacturer in the world, Zildjian, was founded in the 17th century by Armenian alchemist Avedis Zildjian, who first manufactured his clashing cymbals to a secret metallurgical formula for use by the fearsome Ottoman battalions. Still a family business 14 generations later, its only rival is modern cymbal-maker Sabian – founded by erstwhile family member Robert Zildjian in 1981. The current guardians of alchemist Avedis' secret alloy formula are sisters Craigie and Debbie Zildjian of Massachusetts, USA.

Custom Dark Complex Ride
Custom Dark Complex Ride
Custom Hybrid Trash Smash
K
K
K

TRAGEDIES that shaped the world

Discover some of the most harrowing – and preventable – disasters that changed the face of health and safety

Written by Mark Dolan

THE HAWK'S NEST TRAGEDY

In 1930, construction began on a 4.8-kilometre (three-mile) long tunnel in southwest Virginia. The project attracted thousands of men looking for opportunities after the effects of the Great Depression. Around 75 percent of these workers were Black men. The tunnel was drilled into Gauley Mountain, a sandstone mountain, which kicked up large amounts of silica dust, severely affecting the worker's lungs and sight. Soon after construction began, the young workers began to get sick in vast numbers. After six months' work, 80 percent of the workers had got sick, died, or walked off the job. Although hundreds of white men suffered from silicosis as a result of the mine, conditions for the Black workers was worse still. Testimonies from former Black workers in 1936 record that they were denied breaks for fresh air and if they got sick, they were forced from their sickbeds at gunpoint. More than 700 workers died as a result of the silica dust, and the public reaction to the tragic events led to the creation of the Air Hygiene Foundation. Silicosis was soon made a compensable condition by the US Department of Labor.

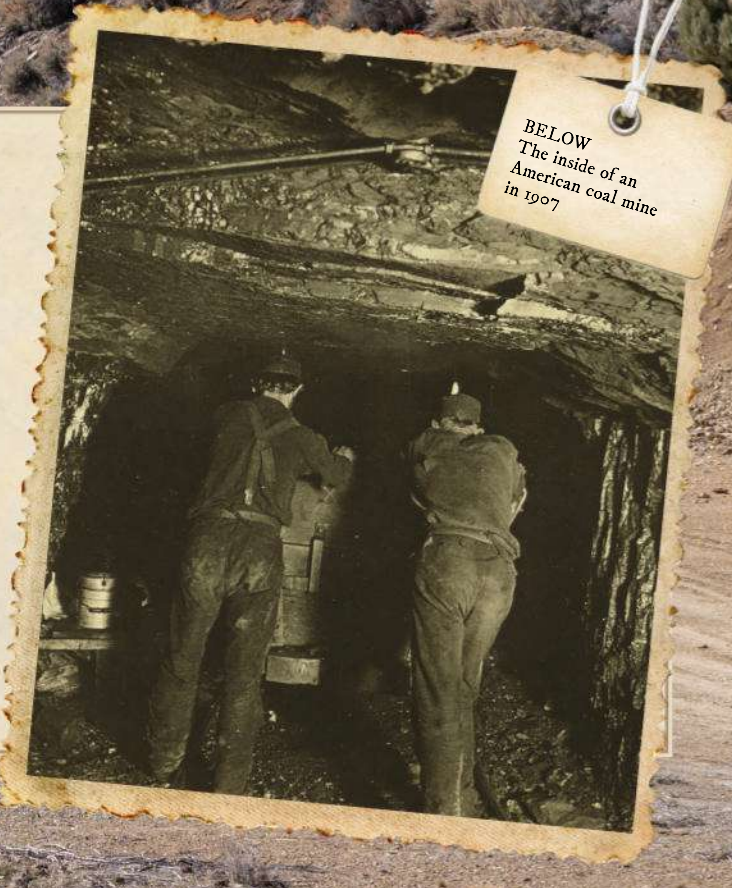
> "THE YOUNG WORKERS BEGAN TO GET SICK"

RIGHT Workers on the Gauley Mountain tunnel who contracted silicosis

Tragedies have happened throughout human history, but in many cases they have led to changes in health and safety that have helped to prevent future disasters. In this article, you will find out about seven of the most tragic events that have revolutionised their industries.

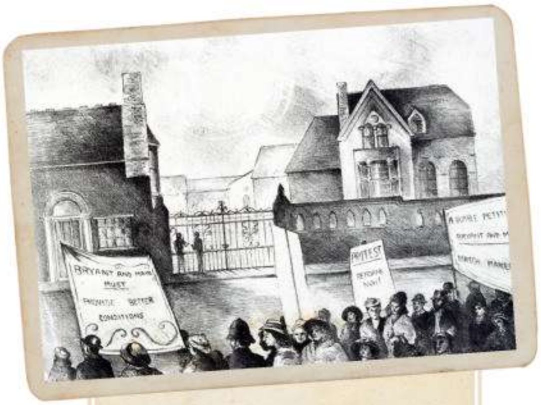
THE MONONGAH MINE DISASTER

On 6 December 1907, America experienced perhaps its worst mining disaster. At 10:28 am, an explosion occurred in two of Fairmont Coal Company's mines. According to official figures, there were 420 men in the two mines at the time of the explosion, though it was common practice for the workers to take their children and other relatives into the mine to help, and so the true figure is likely to have been closer to 500. The initial explosion killed most of the workers immediately. A second explosion damaged the ventilation system that allowed fresh air to circulate, and blocked the entrance. Without the entrance or ventilation, the mine filled with poisonous gas and suffocated those who had survived the first blast. Over 350 miners died. The fallout from the disaster caused public outcry, and led to the passing of the 1910 Organic Act, establishing the United States Bureau of Mines, a government body dedicated to improving the safety of mines.



BELOW
The inside of an American coal mine in 1907

© Getty Images, Alamy


BRYANT AND MAY MUST PROVIDE BETTER CONDITIONS
PROTEST

Phossy Jaw

In the early 19th century, a new scientific discovery was discovered that would transform both the match industry and the wellbeing of thousands of poor factory workers. Charles Sauria, a French chemist, found that adding white phosphorous to matchheads made them more stable than their earlier counterparts, but still able to be struck on any surface. These matches were hugely popular and produced in huge numbers by low-paid workers. Soon, however, it became evident that there was a darker side to the industry. By 1858, reports were appearing of a disease commonly known as 'Phossy Jaw', where workers would develop agonising abscesses, fistulas and necrosis of the jaw, and sometimes even brain damage. Protests began to be held against the use of phosphorous, with figures such as Annie Besant and the founder of the Salvation Army, William Booth, both vocal campaigners. By 1872, some European countries were moving away from the chemical, but it wasn't until the early 20th century that the production of phosphorus matches was outlawed by the International Berne Convention.

> "WORKERS WOULD DEVELOP AGONISING ABSCESSES"

The Aberfan Collapse

The dangers of coal mining extend above ground, as tragically demonstrated by the collapse of a spoil tip over the Welsh village of Aberfan in 1966. Tip 7, which slipped onto the village, was started in 1958, and was over 34-metres (111-feet) tall at the time of the disaster. Against procedure, the tip was built on ground where springs emerge. After three weeks of heavy rain, the saturated spoil heap slid, and more than 110,000 cubic metres (140,000 cubic yards) of spoil slipped onto the village. The main building hit was the junior school – 116 children and 28 adults lost their lives as a result. In October 1966, a tribunal began to determine the cause of the collapse, and after 76 days and testimony from 136 witnesses – the longest UK tribunal in history at the time – the blame was placed on the National Coal Board, and nine members who each bore some responsibility. In 1969, after the findings of the tribunal, the government introduced the Mines and Quarries (Tips) Act 1969, "An Act to make further provision in relation to tips associated with mines and quarries; to prevent disused tips constituting a danger to members of the public; and for purposes connected with those matters".

The Dhaka Factory Fire

In November 2012, a garment factory located on the outskirts of Dhaka, Bangladesh caught fire, killing over 100 people. The fire, thought to have been started by faulty wiring, broke out on the ground floor of the nine-story factory, trapping the workers on all the upper floors. The factory was a major supplier for large international retailers, allegedly including Walmart and the US Marines, and the tragedy, preceded by multiple warnings about the building's safety regulations, led to rapid cutting of associations. Reports suggest that although the fire alarm went off, supervisors prevented workers from leaving the building, instead forcing them back to their workstations.

The blaze influenced safety regulations in both Bangladesh – where workers demanded improved workplace safety – and America, where Walmart announced it would work more closely with suppliers to improve safety measures and donated $1.6m to the Institute for Sustainable Communities to set up an Environmental, Health and Safety Academy in Bangladesh.

SABUJ MIAH
SADEQUL
SULTANA
SHAMSHER
ARE STILL
MISSING
GARMENT WORKER
UNITY FORUM

ABOVE LEFT
A protest against the use of phosphorous in match-making

ABOVE RIGHT
Hundreds of people volunteered to dig out the school

RIGHT
Protestors demanding better safety regulations two years after the fire

MORANDI BRIDGE COLLAPSE

Ponte Morandi, unofficially named for its designer Riccardo Morandi (its official name is the Viadotto Polcevera), was built between 1963 and 1967. By 1979, Morandi was expressing concerns over the rate of degradation of the bridge as a result of environmental factors and pollution. The bridge had received repeated maintenance works since the 1970s, but by 2017, the erosion on some of its stays, in particular the stays of pillar nine, were liable to break, according to a confidential university report in Genoa. The transport minister from 2015 to June 2018, Graziano Delrio, was informed of the need for work on the bridge, but on 14 August that year, it did collapse, killing 43 people and leaving hundreds homeless. The results of the analysis of the collapse have shown that it was the stays of pillar nine that ultimately caused the collapse. A replacement bridge, the Genoa San Giorgio Bridge, was unveiled in 2020 and will be continuously monitored by internal sensors to ensure the structure remains sound.

> "EROSION ON SOME OF ITS STAYS WERE LIABLE TO BREAK"

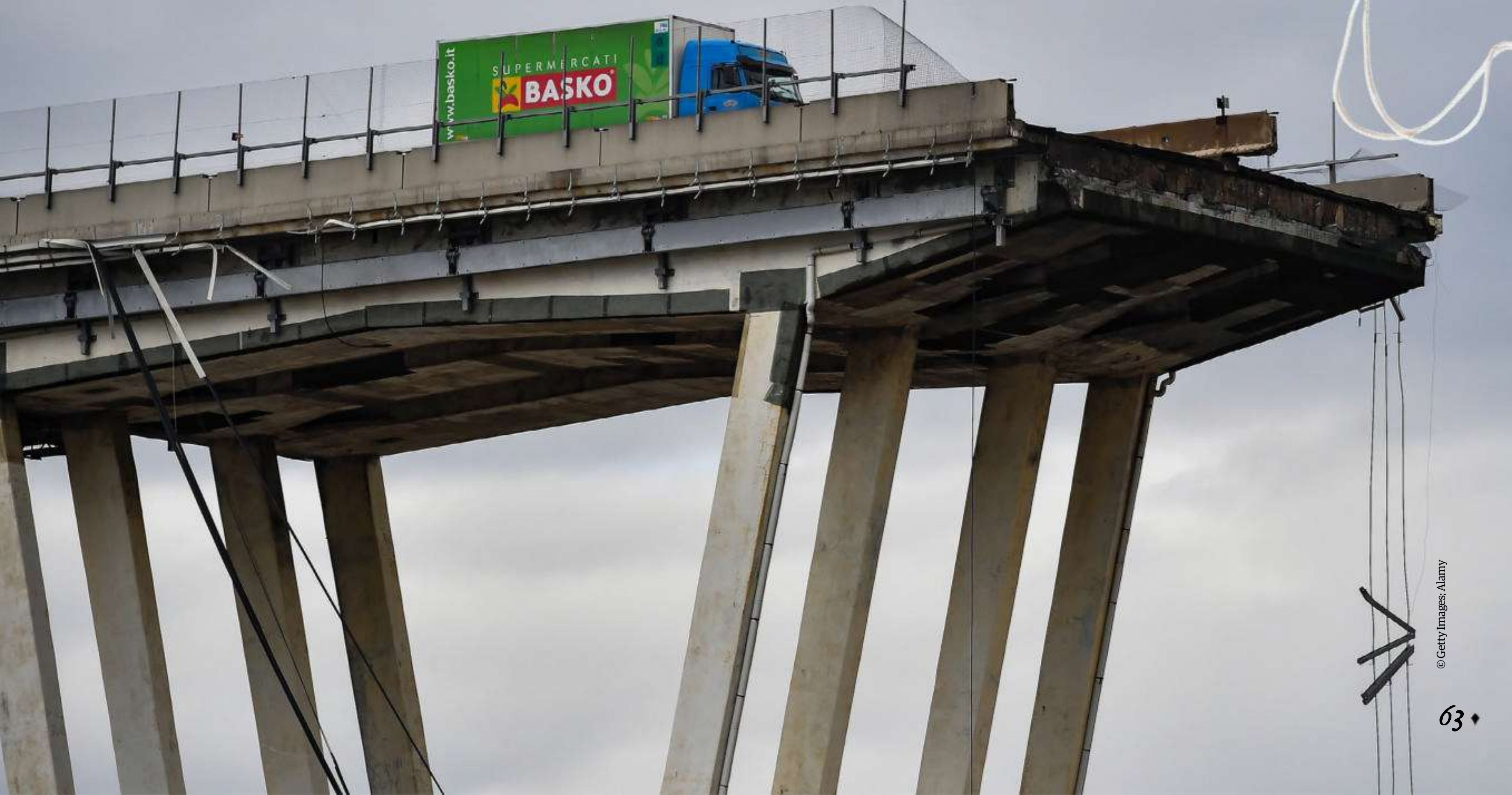
HILLSBOROUGH

The 1989 FA Cup semi-final turned from a day of sport to one of the worst days in British sporting history. At Hillsborough, Sheffield Wednesday's stadium, an effort to ease overcrowding outside the turnstiles meant that exit gate C was opened, causing an influx of fans to flood into the standing-only section of the Leppings Lane stand. The stand buckled under the extra weight, causing a fatal crush. Ninety-seven people died as a result of the crush, the last dying 32 years later, in 2021, because of the severe and irreversible brain damage suffered on the day of the accident. In the 1990s, an inquiry was led by Lord Justice Taylor, and the subsequent report led to wholesale changes in stadium safety measures. Most high level stadiums were converted to all-seater, while the vast majority of stadiums built since have been built without standing room in align with the report's findings.

SHEFFIELD
Hillsborough
HOME FANS ONLY
MAKE IT YOUR BUSINESS TO READ THE SUNDAY TIMES
ALL HUMAN LIFE IS HERE

LEFT
Safety measures are in place to try and avoid the fatal overcrowding of Hillsborough

BELOW
Despite fears over the strength of the bridge, over 40 people died in a collapse



© Getty Images; Alamy

Horrors of HOLLYWOOD

The time of blockbuster movies that cost a billion dollars to make are fast approaching but for some, the price has already proven too high

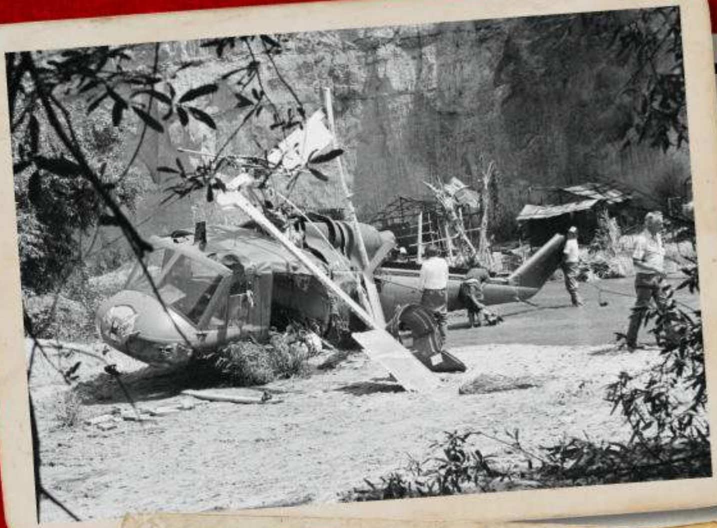
Written by Ben Biggs

The death of Brandon Lee, killed by a live bullet shot from a prop gun on the set of *The Crow* in 1994, is firmly entrenched in pop culture; not least of all because at just 28 years old, he wasn't much younger than the age Bruce Lee, his martial arts movie star father died. But while tragic, it was far from the first tragic accident during the filming of a Hollywood movie - and it wasn't the last.

SHOT DEAD ON SET

"Is this the worst thing that has ever happened to you?" asked ABC host George Stephanopoulos in a TV interview with Alec Baldwin, two years after the Hollywood actor fatally shot cinematographer Halyna Hutchins. Baldwin's reply came without hesitation, before the question could even be finished: "Yes. Yeah. Yep." On 21 October 2021, he had been rehearsing a scene for his upcoming film *Rust*, on a dusty desert ranch film set on the outskirts of Santa Fe, New Mexico. It was a perfect setting for a Western flick and you might expect to see someone get shot there, just not for real. At just before 2pm local time, Baldwin pointed a prop gun – a pistol that had been modified to fire blanks – and the gun discharged a live bullet that had inexplicably found its way into one of the chambers of the revolver's barrel. It hit Hutchins in the chest, killing her almost instantly and wounding director Joel Souza in his shoulder. To this day, Baldwin denied pulling the trigger, telling ABC that he said to Hutchins, "In this scene, I'm going to cock the gun, do you want to see that?". But when he let go of the hammer, the gun just went off. Baldwin was cleared of two charges of manslaughter but for the husband and only child of Halyna Hutchins, their life sentence began that day.

BELOW
A photo of actor Alec Baldwin's hands on the set of his film *Rust*, taken by the County Sheriff's Office after Halyna Hutchins was shot dead



ABOVE
In the aftermath of the accident, crew begin to dismantle the helicopter that killed three actors

LEFT
Relatives of Renee Shin-Ye Chen overcome with grief at the funeral of the six-year-old actor

TWILIGHT ZONE TRAGEDY

When science fiction flick *Twilight Zone: The Movie* hit cinemas in June 1983, it got a fairly cool reception from audiences and was savaged by critics. The film might have faded completely into cinematic obscurity were it not for the very real, tragic and entirely avoidable helicopter crash on the set of the movie, which claimed the lives of three actors: 53-year-old Vic Morrow, seven-year-old Myca Dinh Le and six-year-old Renee Shin-Yi Chen. The accident took place at night, in the early hours of 23 July 1982, during the filming of a risky action sequence that was neither planned nor rehearsed to anywhere near the expected standards of the time. Morrow's character was supposed to carry the characters played by Le and Chen across a river while being chased by a helicopter. But a mortar effect explosive was detonated underneath the tail rotor of the helicopter, sending it into a tailspin that ended when the helicopter crashed on top of the three actors, crushing Chen, while Morrow and Len were dismembered by the main rotor blades. In 1987, five senior members of the film crew, including director John Landis, were acquitted of manslaughter.

© Getty; Alamy

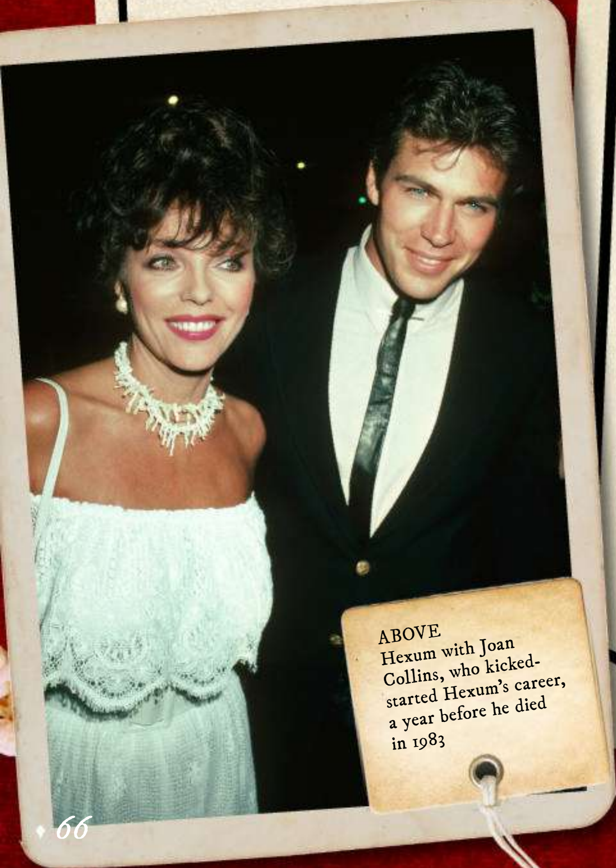
Bad Joke

Jon-Erik Hexum only really became a name in Hollywood after his untimely death – but not for the right reasons. Tall, well-built and handsome, he certainly cut the figure of a leading light, but his rising star was brought firmly down to Earth with one utterly foolish act. On 12 October 1984, Hexum woke up from a siesta on the set of the CBS series *Cover Up*, only to learn that filming was to be delayed yet again. "Can you believe this crap?" he joked with the crew as he picked up a .44 Magnum prop gun, put it to his temple and pulled the trigger. Anyone who knows anything about firearms could have told him that at such a short range, the force of the particles from the blanks exiting the barrel can be just as deadly as a live bullet: the impact on his head fractured his skull and drove a piece of bone into his brain. Despite five hours of surgery, he couldn't be saved and died six days later.

LEFT
Resident Evil: The Final Chapter star Milla Jovovich rehearsing a scene with her stunt double Olivia Jackson, just weeks prior to Jackson's life-changing accident

A stunt too far

Stuntwoman Olivia Jackson lost her life – or at least in her words, "lost the life I loved" – in a horrific stunt-gone-wrong on the set of *Resident Evil: The Final Chapter* in 2015. Jackson was riding a motorbike at speeds of over 70 miles per hour towards a camera mounted on a mechanical arm. The camera was supposed to lift over her head at the last possible moment, but changes had been made that Jackson wasn't told about, which included lifting the camera a whole second later. This cavalier decision by the director translated to an extra 32 metres (104 feet) of distance covered before the camera lifted. Instead of clearing Jackson, it smashed into her torso, tearing part of her face off, rupturing arteries and causing multiple fractures that necessitated the amputation of her arm. Today, her spine twisted and partially paralysed, she is no longer able to pursue her love of martial arts and motocross, and her stunt career is over. But at least she survived to win significant damages against the film studio: just weeks later, crew member Ricardo Cornelius was crushed to death by a falling Humvee.



ABOVE
Hexum with Joan Collins, who kicked-started Hexum's career, a year before he died in 1983

Fatal flooding

By the late 1920s the gilt had truly rubbed off the so-called 'Golden Age of Hollywood' for many actors and film crew. The previous decade had seen a number of deaths during filming every year, with people being accidentally shot by live bullets, drowning, falling from heights, blown up and even being attacked by animals. But it took fatalities on the set of the semi-silent movie, *Noah's Ark*, in 1928 for a set of stunt safety regulations to finally be implemented by the industry. The show-stopping flood scene involved over two million litres of raging water and a cast of hundreds of extras, who flailed around in the waves and clung to the wooden hull of the ark. Safety precautions were an afterthought and cameraman Hal Mohr refused to shoot the scene because of director Michael Curtiz's willingness to allow people to be hurt in the name of realism. Only a few pieces of the production's paperwork have survived today but it's thought that three people drowned while acting this scene, multiple bones were broken, and one extra was injured so badly that their leg had to be amputated. Not even the female lead, Dolores Costello, got away from it unscathed: she was knocked unconscious by the sheer force of the deluge.

RIGHT
The pain caused by *Noah's Ark* resulted in stunt safety regulations finally being created and implemented

BELOW
7,500 extras are said to have worked on *Noah's Ark*, many of whom appeared in its disastrous flood scene

© Warner Bros

★★★★★

FALLOUT

The 1956 movie, *The Conqueror*, starring a badly-cast John Wayne as the 13th century warlord Genghis Khan, was widely panned by critics. But the real tragedy of this Hollywood flop only became apparent decades later. It was shot in the Mojave Desert, southwest Utah, which was a conveniently local analogue to Mongolia's Gobi Desert, and also one of the sites where the US Atomic Energy Commission was testing nuclear bombs at the time. A photo of John Wayne, his sons and a crew member taken during filming shows Wayne holding the handle of a Geiger counter that, according to accounts from the cast, crackled violently over an inconspicuous patch of scrub. Wayne looks relaxed, his sons curious, the crew member casual as he shows them how to read the dial – reflecting the ignorance of the dangers of radiation at that time. In 1980, of *The Conqueror's* 220 cast and crew, 91 were suffering from some form of cancer, 46 of them were terminal. John Wayne had already died – of stomach cancer in 1979.

LEFT
By the time *The Conqueror* was being filmed, dozens of atomic bomb tests like this one in Nevada had been conducted in the Mojave Desert

© Getty; Alamy; Shutterstock

HELL on EARTH

How seven acts of genocides throughout history happened, and why

Written by Christopher Evans

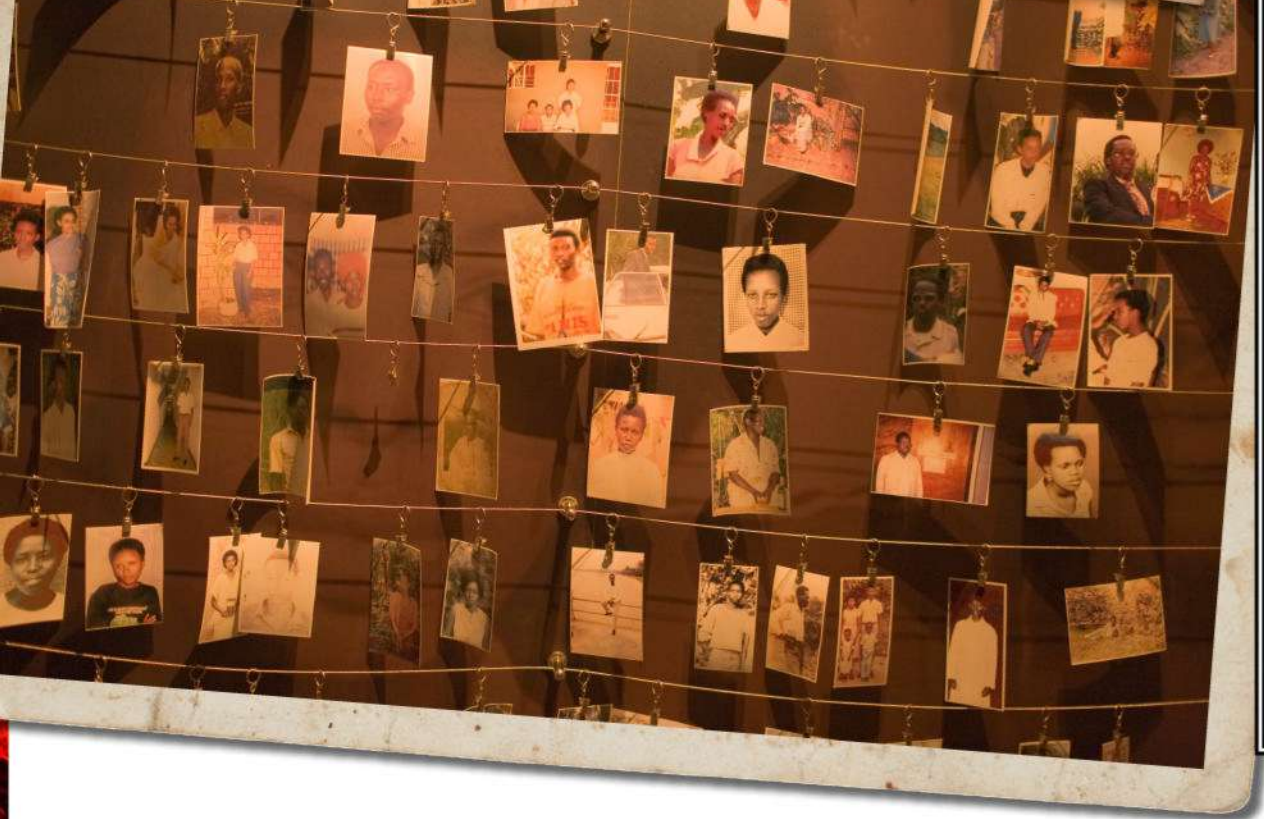
The word 'genocide' was created in 1944 by Polish-Jewish lawyer Raphael Lemkin, attempting to describe the organised slaughter by the Nazis in World War II. Today it is used to describe crimes with the intention of destroying whole ethnic, racial, or religious groups of people.

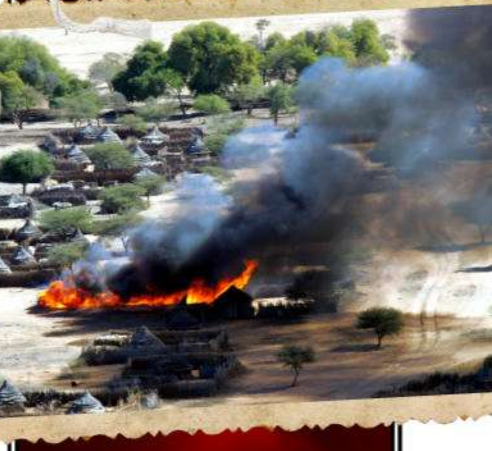
RWANDA

In 1994, in the space of just 100 days, over 800,000 people were slaughtered during the Rwanda genocide. The population of the country at the time was made from three ethnic groups – the Hutu, who made up the 85 percent majority, the Tutsi (14 percent), and the Twa (one percent). Following years of growing tensions, President Juvénal Habyarimana's plane was shot out of the sky. It is still not definite who was responsible, but Hutu extremists seized the event to begin a meticulously organised campaign of murder against the Tutsi minority, as well as some of their own moderates, including the prime minister.

The speed and savagery of the killings shocked the world. Militias hunted down political opponents, neighbours turned on each other, and men even killed their Tutsi wives. Radio and media propaganda spurred civilians on to "weed out the cockroaches", publishing lists of people to murder and how to find them. Nuns and priests even slaughtered people who attempted to hide in their churches. When a Tutsi-led military, backed by Ugandan forces, finally regained control of the country, an estimated million people were dead, and a further two million refugees had fled the borders.

> "The speed and savagery of the killings shocked the world. Militias hunted down political opponents, neighbours turned on each other, and men even killed their Tutsi wives"





BELOW
Photographs of the victims line the walls of the Kigali Genocide Memorial in Rwanda

RIGHT
After murdering its inhabitants, the Janjaweed would burn villages to the ground

DARFUR

Located in western Sudan, Darfur is home to African farming communities and villages. After British colonial rule came to an end in the 1950s, Sudan has been under the control of the Arab minority. The division between the African and Arab populations resulted in years of violence and civil war within the country, with the Arab government forcibly taking grassland and resources from the African farmers as more of Sudan became desertified. In 2003, spurred on by the poor treatment they faced, African rebel groups attacked a government airbase in Dafur. In response, the government launched a campaign of violent ethnic cleansing against all non-Arabs in the area. Planes bombed African villages, while an Arab militia group named the Janjaweed ('devils on horseback') raped, tortured, and murdered the inhabitants, and poisoned their water wells. The result was the deaths of over 300,000 innocent civilians, as well as over 2.5 million displaced from their homes and forced to live in camps. The UN sent in peacekeeping troops who withdrew in 2021, declaring the conflict over, much to the protest from the Darfur population, as the humanitarian crisis is still considered ongoing.

© Alamy, Getty Images

Heritage
Trail
The Trail of Tears

LEFT
A marker for the Trail of Tears, which is over 8,000km (5,000mi)

THE TRAIL OF TEARS, GENOCIDE OF THE NATIVE AMERICANS

After years of attempting to 'civilise' the indigenous people of North America, in 1830 then president of the United States, Andrew Jackson, signed the Indian Removal Act. This allowed the government to swap Native land, with that in the 'Indian Territories' to the West. The law stated the land had to be given up peacefully by choice, but the government ignored this almost immediately. The Choctaw Nation were first to be removed. Dragged from their homes by gunpoint, they were chained and forced to march across the country towards the West. Thousands perished along the way from starvation and disease, or froze to death in the bitter winter. The tribe leader referred to it as a "trail of tears and death".

The Cherokee people resisted relocation and some self-appointed members negotiated a treaty to sell their land for $5 million. While the government accepted this, the majority of the people did not, and rejected it. When they refused to move west, they faced the same fate - tied up and marched across the land where they fell victim to dysentery and cholera, an estimated 5,000 died.

Native land would continue to shrink and the Trail of Tears was classified as a National Historic Trail in 1987.

BOSNIA AND SREBRENICA

After Bosnia declared its independence in 1992, Bosnian-Serb forces began what would be a four-year campaign of violence that resulted in the biggest European massacre since the Holocaust. Serbia's aim was to eject the Bosniak-Muslim population from Bosnian territories by ethnic cleansing - made up of detainments and deportations. As the civil war raged on, Bosniaks were sent to camps to be tortured and killed and the UN set up safe zones in Muslim enclaves such as Srebrenica and Sarajevo. In 1993, Serbian troops entered Srebrenica, forcing over 23,000 people onto buses and out to Muslim controlled areas. These buses would regularly be stopped and the passengers raped and tortured. Humanitarian aid workers stationed to help in refugee camps noticed that almost all the people arriving were women, children, and elderly. The shocking truth was soon discovered - helped by the inaction of the Dutch UN forces at Srebrenica, around 8,000 Bosniak men were massacred in a matter of days. In 1994 NATO launched airstrikes on the Serbian forces, and a ceasefire was declared in 1995. More than 160 people were indicted in the Hague for atrocities committed during the war.

ABOVE
A refugee camp in Tuzla, Bosnia, for Muslims fleeing the Srebrenica massacre

BELOW
Bones poke through the soil of the Killing Fields in Cambodia

THE KILLING FIELDS OF CAMBODIA

In the years leading up to the Cambodian genocide, income equality and class divisions ignited civil war. The Cambodian government was corrupt, serving only the wealthy in urban areas, while most of the population struggled in the rural parts of the country. In 1975 the communist party Khmer Rouge, led by Pol Pot, seized power, declaring it "Year Zero", and set about "cleansing" society in line with their beliefs. There would be no class, no religion, no personal property, and no individuality. Cities were emptied and their populations forced into the countryside and into manual labour. Anybody associated with the previous government, intellectuals such as doctors and teachers, as well as ethnic and religious minorities, all became targets for persecution. Prisons were set up, which became execution centres. Across the country hundreds of thousands of people were killed in the countryside and buried in mass graves, in locations which became known as 'Killing Fields'. The Khmer Rouge's mishandling of the country's economy led to food shortages, which resulted in Cambodians starving. After four years of terror, Vietnam invaded and overthrew the Khmer Rouge in 1979.

© Alamy, Getty Images

THE BANGLADESH GENOCIDE

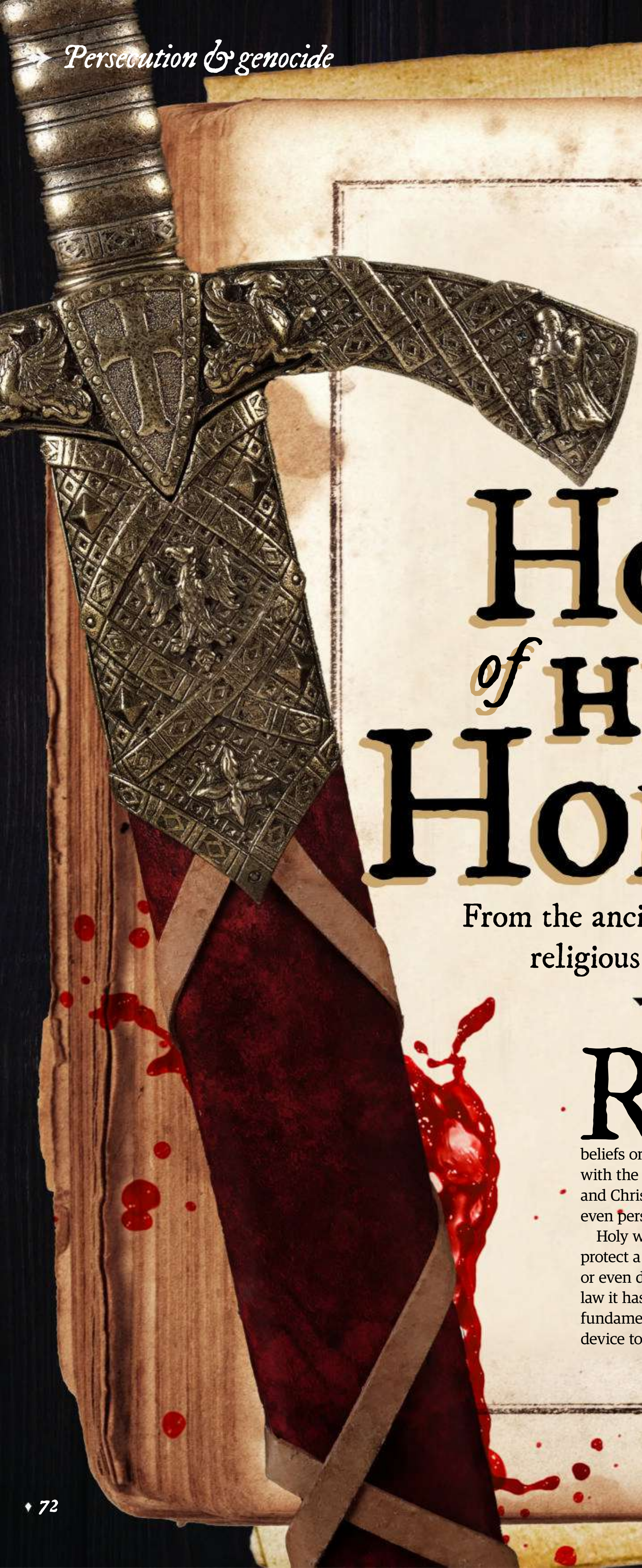
Often referred to as "the forgotten genocide", the slaughter of Bengalis in East Pakistan (now Bangladesh) left a death toll of an estimated three million people. After independence from Britain, India was separated into India and Pakistan, which was further divided into West and East. East Pakistan, despite having the larger population made up of Bengali Muslims, was exploited by the West. In the first democratic election, the East won greater control of the assembly, sparking the West to lash out in an attempt to curtail the growing call for Bengali liberation. What followed was an ethnic cleansing of the Bengali population, with acts such as mass killings, torture, rape and slavery committed by Pakistani soldiers. The US steadfastly refused to intervene, as they considered Pakistan an ally in the Cold War and did not want to risk losing its support. After nine months of slaughter, support from India helped Bangladesh force Pakistan into surrender and declare its own independence.

BELOW-LEFT
Victims of the Armenian genocide in the Turkish countryside

BELOW
Then US President Richard Nixon and Secretary of State Henry Kissinger actively undermined international response to the genocide in Bangladesh

ARMENIAN GENOCIDE

In the midst of the outbreak of World War I, the relatively new Young Turks government stepped up their persecution of the Armenian population in the Ottoman Empire. With the desire to 'Turkify' the country, as well as a rising fear that the Armenians could join invading troops and help the Allies win, the Turkish government began a reign of slaughter that would go on for three years. In the spring of 1915, Armenian citizens were dragged from their homes and forced to march through the deserts without water until they dropped dead or were executed for stopping. Killing squads made of murderers and ex-convicts were also organised by the government to slaughter Armenians, often drowning them in rivers or crucifying them and setting them on fire. It is estimated that as many as 1.5 million Armenians died. After the Ottomans' surrender in 1918, the Young Turks fled to Germany to escape prosecution. To this day the Turkish government refuses to use the term 'genocide' to describe the events, and insist they were only at war with an enemy.



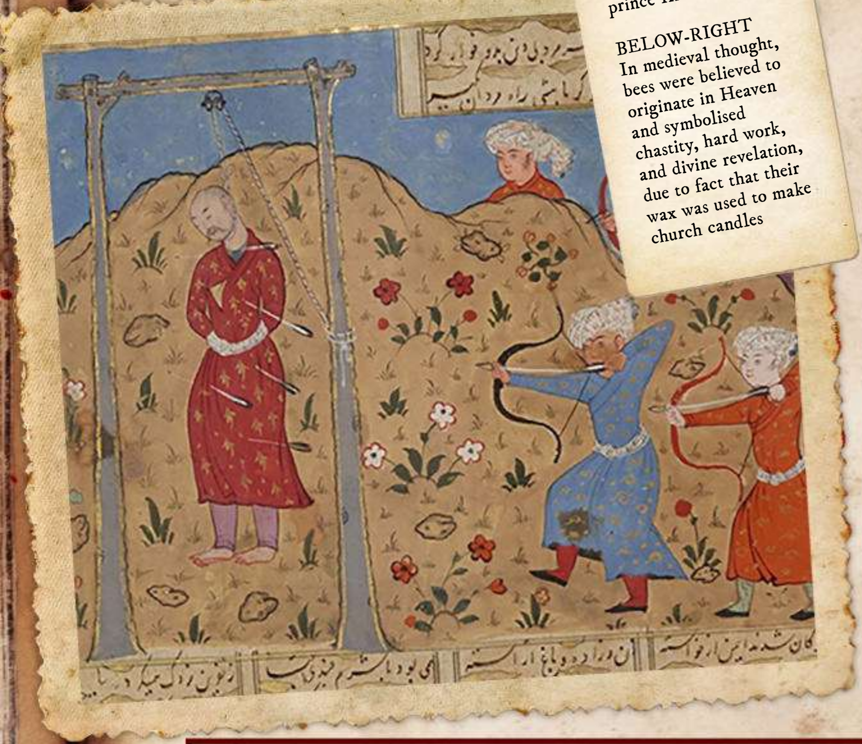
HORRORS of HERESY & HOLY WAR

From the ancient world to today, the accusation of religious crime can be a powerful threat

Written by April Madden

Religious law is designed to protect a faith and its tenets, and one way it does that is by defining some things as doctrine and others as heresy. Heresy is any theory or belief that disagrees with a religion's accepted practices, beliefs or rules. While heresy is most commonly associated with the Abrahamic Religions of the Book (Judaism, Islam and Christianity), other faiths can and do prosecute - and even persecute - it too.

Holy war is a conflict that is undertaken primarily to protect a faith and its adherents, usually from other religions or even different sects of the same one. Though in religious law it has a very strict definition, in practice zealots and fundamentalists across all faiths will use it as a rhetorical device to whip up emotions among their followers.



LEFT
The followers of Persian priest Mazdak were executed in a very creative way by crown prince Khosrow

Khosrow I's
murder garden

Khosrow I was the Sasanian King of Kings in early medieval Persia (now Iran). While he was still a prince, his father Kavad enacted some reforms, one of which was cracking down on the sect of an influential priest and prophet called Mazdak. At the time Persia's state religion was the ancient faith of Zoroastrianism, although other religions were permitted as long as they obeyed Persian law and paid a special tax. Mazdak's group was nominally Zoroastrian, but it also believed in social tenets such as less religious formality and ceremony, and the fair distribution of wealth and resources. Its anti-aristocracy, anti-priesthood rhetoric threatened Kavad's power base, so he had it denounced as a heresy not only by Zoroastrian clerics, but by Jewish, Muslim and Christian ones too.

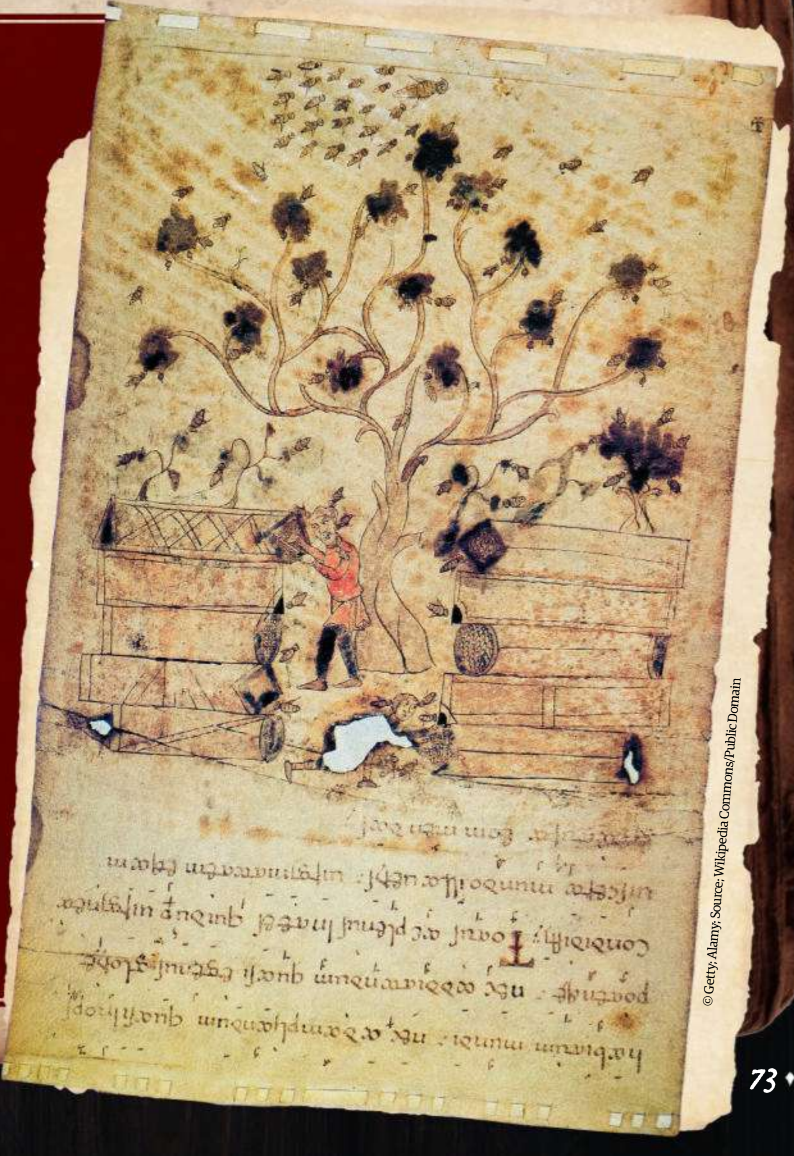
Kavad tasked his son with dispensing a suitable punishment for the heretics. According to the Persian epic poem the *Shahnameh*, Mazdak received an invitation from the prince shortly afterwards, offering a visit to a unique orchard, the like of which no one had seen before. When he arrived at Khosrow's garden, he found it planted with his followers, buried alive upside-down, with their legs and feet still visible. Mazdak himself was then strung up and shot.

Leutard
and the bees

The turn of the first millennium - from 999 to the year 1000 - was a turbulent time for the Church. Up until the new year passed uneventfully there had been genuine concerns that the world might end in judgement and flames. When this didn't happen, Catholic Europe breathed a sigh of relief.

In the autumn of that year, in the northeastern French town of Vertus, a peasant by the name of Leutard fell asleep in a field. He dreamed of bees. The bees got into his body through his genitals and buzzed their way up to his mouth, whispering to him of impossible deeds and the word of God. They told him that it was wrong to idolise the suffering of Jesus on the Cross and that the Church shouldn't be taxing Christian incomes in the form of tithes. They told him to do something about it.

Leutard did. He defaced a crucifix in the local church: when his fellow townsfolk questioned him he told them of his divine revelation. The bit about tithes got their attention - many medieval peasants were routinely beggared by church taxes. Leutard began to preach his vision further afield, until the Church eventually charged him with heresy. In his defence he quoted Bible passages that an illiterate fieldworker at the time was unlikely to know, let alone understand. He asserted that just because the biblical prophets had got some things right, they weren't to be trusted about everything. The scandalised Church didn't believe in Leutard's miracle of the bees and found him guilty, calling him a madman and "an envoy of Satan". While they stopped short of condemning him to death, Leutard threw himself into a well shortly afterwards.



BELOW-RIGHT
In medieval thought, bees were believed to originate in Heaven and symbolised chastity, hard work, and divine revelation, due to fact that their wax was used to make church candles

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LEFT
Hitler wanted to present himself as a Nazi messiah, and he tried to twist elements of Christianity in order to do so

BELOW-LEFT
For the Ophites, the serpent in the Garden of Eden was worthy of more praise than the Christian god

BELOW-RIGHT
The Defenestrations of Prague eventually became inciting incidents in a vast Central European religious war

HITLER'S HERESY

Nazi Germany is famous for twisting ancient Germanic paganism and other occult mythology into its warped worldview, but it also subverted Christianity for its own dark ends. Many Germans followed the Protestant Christian faith – Germany was, after all, the home of revolutionary 16th century church reformer Martin Luther – and Hitler felt that to get the populace on board with his dreadful vision, he needed to show them that the Nazi Party respected their religion. His 'positives Christentum' postulated that the Old Testament (and much of the New) was "impure" and "corrupted by Jews", claimed that Jesus was "Nordic" in ethnic origin (blond and blue-eyed and of the Aryan 'master race' the Nazis claimed themselves to be), and focused on some carefully selected excerpts of Christ's teachings rather than on the divine miracles of the Bible. It even went so far as to make the odious claim that Hitler was the "German Messiah", leading his faithful to their own divinely appointed (or rather, ethnically purged) homeland.

GNOSTIC SNAKE SECTS

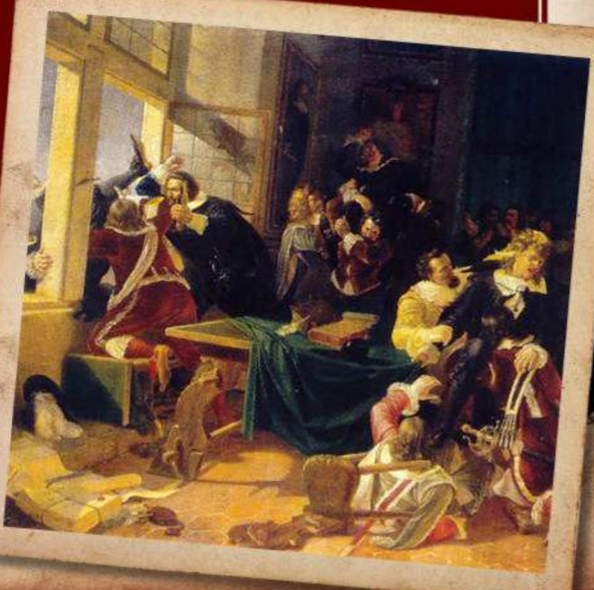
Most Christian heretics, despite what the Church thinks of their misguided beliefs, still believe that their god is, in general, a good thing. Not so the Ophites. This umbrella term, meaning 'serpent', describes a group of Christian mystery cults found in the 2nd century Roman Empire. They turned the story of the Garden of Eden on its head, with a jealous god withholding truth and wisdom from humanity while the wise and benevolent serpent encouraged Eve to taste the forbidden fruit of knowledge.

Gnostic sects were all about knowledge. These secretive groups blended elements of early Christian theology with the Jewish mystical system of the Kabbalah and Zoroastrianism's ideas about the duality of good and evil, to create a belief system in which gods were not what they seem and in which the material world is a poor and broken analogue of the true realm of the spirit. For the Ophites, the biblical Jehovah was a 'demiurge': a god only of the material world who was actively antagonistic to the Supreme Ruler of the spiritual realm.

THE DEFENESTRATIONS OF PRAGUE

What do you do when you have a disagreement with your local council? For the Protestant townsfolk of Prague, in 1419, 1483 and 1618, the answer was to throw some key Catholic lawmakers out of a window.

The capital of today's Czech Republic, Prague was then the first city of Bohemia, an ancient Germano-Celtic nation in Central Europe. It was also the home of Hussitism, an early form of Protestantism based on the teachings of Jan Hus, a priest and theologian who was burned at the stake for heresy in 1415. The Catholic church and the local government continued to root out and purge Hussites years after Hus's execution. The Hussites, meanwhile, accused the Catholic church of corruption and embarked on protest marches and acts of civil disobedience. In 1419 they threw a judge, a magistrate and several councillors from a window of the town hall. In 1483 it was the Chief Burgomaster and seven councillors. In 1618, after a meeting to air grievances between the two sides, the Protestant faction hurled two lords regent and their secretary from a window of the Bohemian Chancellery. Remarkably, the three survived (the Catholics said it was a miracle, the Protestants that a dungheap below the window had broken their falls). The incident set the stage for the Thirty Years' War, a brutal and drawn-out conflict between Catholic and Protestant factions in Central Europe.

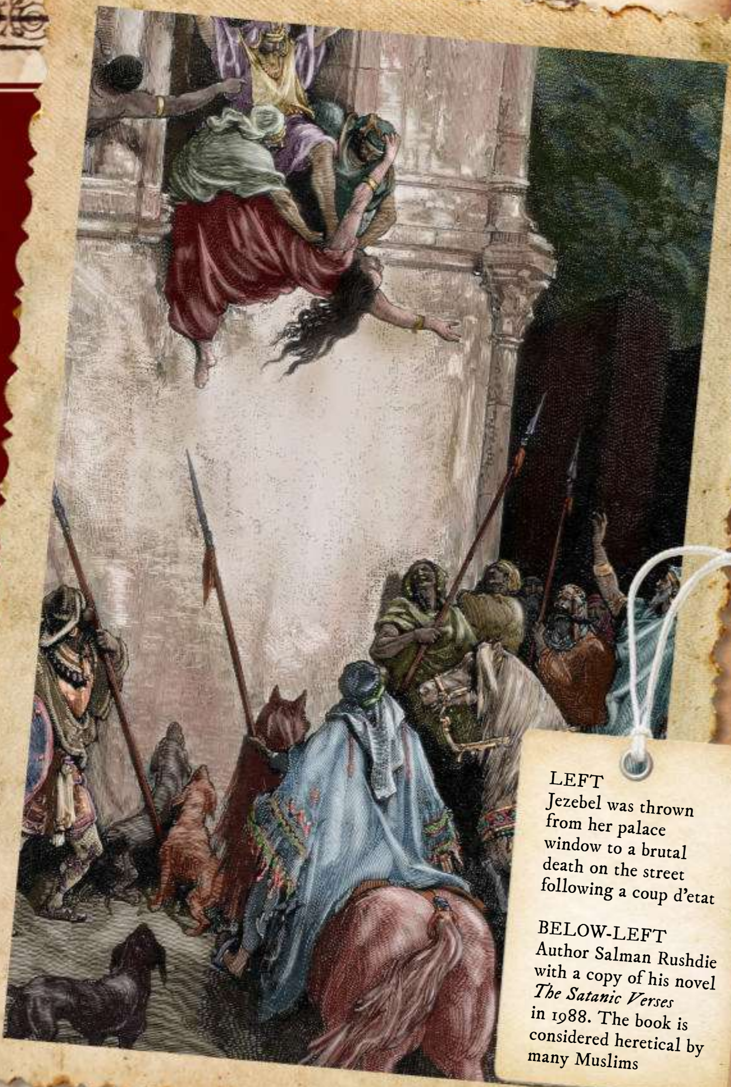


ANCIENT ISRAEL'S HERETIC QUEEN

Before Judaism had been codified into the religion it is today, the people of ancient Israel acknowledged several gods and goddesses. Ahab was the king of Samaria, a kingdom whose allegiance was given to Yahweh – a figure who, after much twisting and turning of history, would eventually be enfolded into the notion of the all-powerful biblical God of the Old Testament. Long before all of that happened, however, Yahweh's cult wanted to embrace monotheism (the act of only believing in one deity).

Ahab's queen was a Phoenician princess called Jezebel, who was also a priestess of the goddess Asherah and Yahweh's rival god, Baal. As queen, Jezebel favoured followers of her own strand of the old Levantine religion, to the ire of the Yahwist prophet Elijah, who set himself against her at every turn. Elijah claimed that Jezebel would die horribly, for which he was exiled. Not long afterwards his prophecy came true: after the death of Ahab, followers of Elijah staged a coup d'etat in which Jezebel was thrown from the walls of her palace in all her queenly regalia.

> "Jezebel favoured followers of her own strand of the Levantine religion, to the ire of Elijah"



LEFT
Jezebel was thrown from her palace window to a brutal death on the street following a coup d'etat

BELOW-LEFT
Author Salman Rushdie with a copy of his novel *The Satanic Verses* in 1988. The book is considered heretical by many Muslims

THE 1988 BOOKER
SALMAN RUSHDIE
THE SATANIC VERSES

SALMAN RUSHDIE AND THE SATANIC VERSES

In 1988 British-Indian novelist Salman Rushdie published his fourth book, *The Satanic Verses*. Its complex, magical plot includes a dream sequence that refers to a Muslim heresy about three pre-Islamic goddesses who were once venerated in ancient Mecca. The inclusion of this device caused offence to many Muslims worldwide, but to the theocratic government of 1980s Iran, it was the worst of sins. A fatwa was issued against Rushdie – a writ from a Muslim legal court, in this case from Ayatollah Khomeini, then the Supreme Leader of Iran – that called for his death. Rushdie went into hiding under police protection for several years.

As time passed, it seemed that the threat had largely faded, apart from the reminder that Rushdie would receive annually on the anniversary of the fatwa, which he called "my unfunny valentine". He started going about the everyday life of a bestselling author once more: writing books, appearing on television, posting on social media and making public appearances without a security detail. On 12 August 2022 he was giving a lecture in New York State when he was attacked, suffering life-changing injuries. Criminal proceedings are ongoing, but it has been reported that the suspect, a Lebanese-American in his mid-20s, had voiced support for Iran's hardline religious policies on social media. Heresy is still a dark accusation that threatens people around the world to this day – Salman Rushdie is simply its most famous modern subject.

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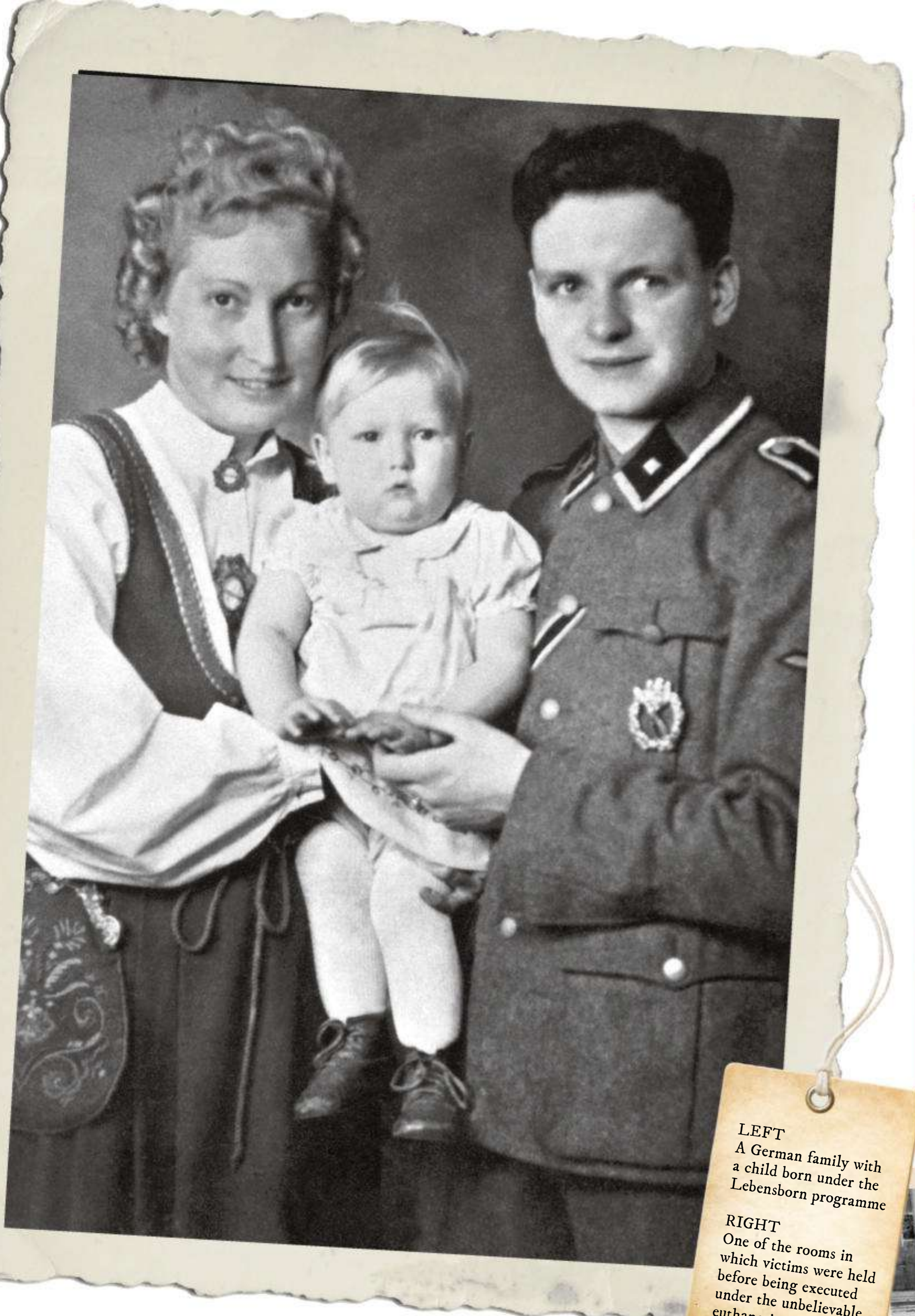
NAZI ATROCITIES

Discover the most harrowing Nazi war crimes

Written by Mark Dolan

It is no secret that during World War II the Nazis conducted inhumane acts, but the darkest episodes are still often hidden away. These six events unveil the true evil of the Nazi regime.



EUTHANASIA OF CHILDREN

One of the central aims of the Nazi regime was the 'purification' of the German population. According to the eugenicist ideals of the Nazis, people who were mentally or physically disabled were 'unworthy of life' and could not be allowed to procreate and pass on their 'defective' genes to the next generation. In early 1939, plans began to be put in place for a secret policy of killing disabled children. On 18 August, the Reich Ministry of Health issued a decree requiring doctors, nurses and midwives to report infants under three years old who were showing signs of physical or mental disability. By October, parents of disabled children were being encouraged to send them to specialist clinics in Germany and Austria for treatment and care. Instead, these clinics specialised in killing children, with staff administering lethal overdoses or subjecting the infants to fatal starvation. Although at first the programme only included the execution of very young children, this was expanded to adults in Aktion T4 (see next page).

LEFT
A German family with a child born under the Lebensborn programme

RIGHT
One of the rooms in which victims were held before being executed under the unbelievable euthanasia programme

LEBENSBORN

The Lebensborn (literally 'fount of life') programme was the Nazis' method for ensuring that the next generation would fit their eugenicist ideas, producing a generation of exclusively Aryan children. At first, the programme was focused on the encouragement of German women who fit the Aryan mould to have large families, or the discouragement of single women from seeking abortions. In addition, German people would be required to prove their Aryan ancestry before they were permitted to marry, and any with alleged 'racial impurity' were denied permission, as the Nazis sought to eradicate traits they considered undesirable, such as mental or physical disability. At the same time as discouraging 'racially elite' women from seeking abortions, they were conducting hereditary health courts, ordering mandatory abortions and sterilisation of those considered not of 'good racial stock'.

With the losses incurred by World War II, Heinrich Himmler decided the Nazis were in danger of losing too many of their most 'racially valuable' soldiers. In order to address the losses, the Lebensborn programme was extended to include the kidnapping and forced 'repatriation' of children living outside Germany who had German ancestry or simply suitable racial features. Thousands of children, mostly from eastern and southeastern Europe, were abducted and sent to be raised by German families, who were led to believe they'd been orphaned by the war.

> "Clinics specialised in killing children, with staff administering lethal overdoses or subjecting the infants to fatal starvation"

© Getty; Shutterstock

RIGHT
The office of Adolf Wahlmann, the head of one of the 'clinics' used for the executions

MENGELE'S TWIN EXPERIMENTS

One of the most infamous figures of the Holocaust was the German doctor Josef Mengele, known also as the 'Angel of Death'. Rather than being the mad scientist some have portrayed him to be, Mengele was a highly trained and respected physician, but one who fully embraced the racist pseudoscience of eugenics. During his time working at Auschwitz, Mengele had the opportunity to freely conduct inhumane experiments on Jewish and Roma people, both of whom were considered subhuman by the Nazis and thus exempt from medical ethics.

Many of Mengele's experiments were conducted on twins, the vast majority of them children, and included deliberately infecting them with diseases such as typhus; sewing twins together to create 'conjoined' twins; transfusing blood between twins of opposite sex in an attempt to change their sex; genital mutilation; and an attempt to attach the urinary tract of a seven-year-old girl to her own colon. All experiments were carried out without any form of pain relief, and in many cases the children died. Where just one twin died, the survivor was routinely killed and dissected for comparative purposes. Out of around 3,000 children experimented on, roughly 200 survived.

RIGHT
Josef Mengele, the Nazi doctor known as the 'Angel of Death'

ABOVE
Photo of Dachau concentration camp

Aktion T4

Aktion T4 is an authorisation signed by Hitler in the autumn of 1939, the name of the document coming from the location of the Führer's Chancellery, at Tiergartenstrasse 4. It expanded the child euthanasia programme (see previous page) to began murdering physically and mentally disabled adults. The leaders of T4 – Karl Brandt, Hitler's personal doctor and Philipp Bouhler, a high-ranking Nazi official – sent out a form to all public and private health institutions, care homes and mental institutions, ostensibly to collect data, but in reality, the forms were intended to identify people deemed 'Lebensunwertes Leben' ('life unworthy of life). This included people suffering from schizophrenia, epilepsy, dementia and other neurological disorders, the criminally insane, those not of German or 'Aryan' blood, and those institutionalised for more than five years.

People who met any of these criteria were taken from their institutions and transported to one of six execution centres across Germany, where they were gassed almost immediately upon arrival. According to T4's own records, over 70,000 disabled people were killed under the initiative.

The Dachau Low Pressure Murders

There were three key aims of the Nazi's inhumane experimentation on Jewish and Roma people. Firstly, they wanted to establish biological bases for their eugenicist philosophies, secondly, they wanted to test new drugs and medical procedures, and lastly, they wanted to test the survival chances of their own military personnel.

One set of experiments carried out at Dachau in 1941-2 were designed to work out how long soldiers could survive at high altitudes. To test their ideas, the Nazi doctors put Jewish people into low-pressure chambers with little or no oxygen, and watched as they suffocated, recording the timings and effects of the suffocation.

One such experiment was written about by an SS official named Sigmund Rascher in a letter to Heinrich Himmler in April 1942. Rascher writes that a 37-year-old Jewish man was subjected to a continuous deprivation of oxygen. After four minutes, the victim began to sweat, after five minutes he suffered cramps, after six to ten minutes he passed out, after 11 minutes his breathing slowed to three breaths in a minute, and after 30 minutes he began to foam at the mouth and succumbed to death.

ABOVE
The end of the train track into Auschwitz

The Jewish Skull Collection

The Nazis were very eager to present their racist beliefs as founded on scientific truth and biological fact. One way they intended to 'prove' that Jewish people were the subhuman people they believed them to be, was through creating an anthropological display of specimens in the Anatomy Institute of the Reich University of Strasbourg. Under the direction of the SS officer August Hirt, 86 Jewish inmates at Auschwitz were selected as having 'stereotypical Jewish racial features', and quarantined from the Typhus outbreak at the camp to protect their value as anatomical specimens.

They were transported to the concentration camp at Natzweiler-Struthof and fed well to improve the appearance of their corpses, before being executed in a gas chamber two weeks later. The improvised gas chamber even included a one-way mirror to allow the Nazi officials to observe and determine whether 'inferior races' died differently from 'superior races'. The intention was to create plaster casts of the victims' bodies before defleshing them and using their bones, especially their skulls, in a display of Aryan/German inherent biological superiority over these 'üntermenschen'.

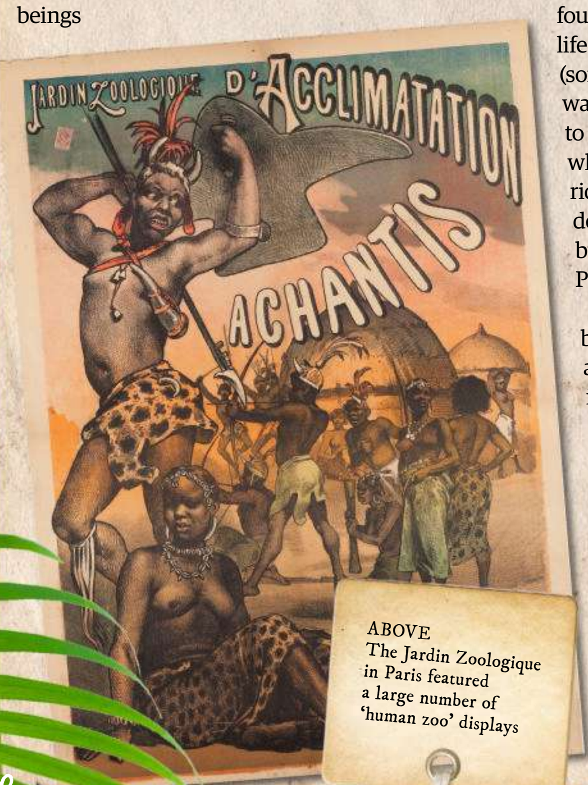
The project was never completed, and when the Allies arrived at the camp, they found complete and dismembered corpses, some preserved in formalin.

HUMAN ZOOS

From the late 19th to the mid-20th century, indigenous peoples were displayed for the amusement of paying Westerners

Written by Callum McKelvie

Steel bars surround an enclosure as leering faces stare in, shouting obscene chants. The indigenous men, women and children kept inside the cages do their best to ignore the cruel jeers of the onlookers. Between the late 19th and mid-20th centuries, such a distressing scene was unfortunately commonplace, as human beings from a variety of cultures were displayed as 'exotic specimens' in front of paying Westerners in disgusting tableaus that have become known as 'human zoos'.



ABOVE The Jardin Zoologique in Paris featured a large number of 'human zoo' displays

Although it was in the latter half of the 19th century that the practice of human zoos truly began, examples of indigenous persons being placed on display in Western cultures can be found before then. For the last five years of her life until her death in 1815, Sarah Baartman (sometimes referred to as Saartjie Baartman) was exhibited in London. Baartman is suspected to have had a condition known as steatopygia, which resulted in large buttocks – often ridiculed in cruel caricatures. Even following her death she was denied the dignity of a decent burial and parts of her body were displayed in Paris until 1974.

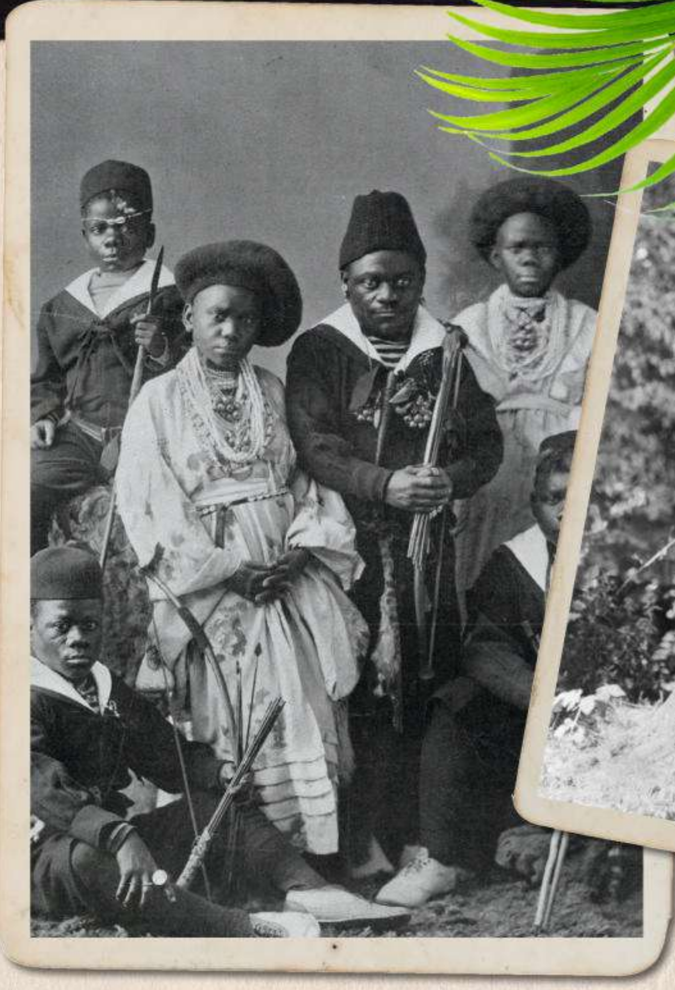
But it was in the 1870s that human zoos began in earnest. A typical exhibition attempted to place indigenous persons in 'authentic recreations' of their native environments. These exhibitions were rooted in notions of white superiority. A 1906 article in the *New York Times* on the case of one such displayed human, Ota Benga, summed this thinking up when it stated: "The idea that men are all much alike except as they have had or lacked opportunities for getting an education of books is now far out of date".

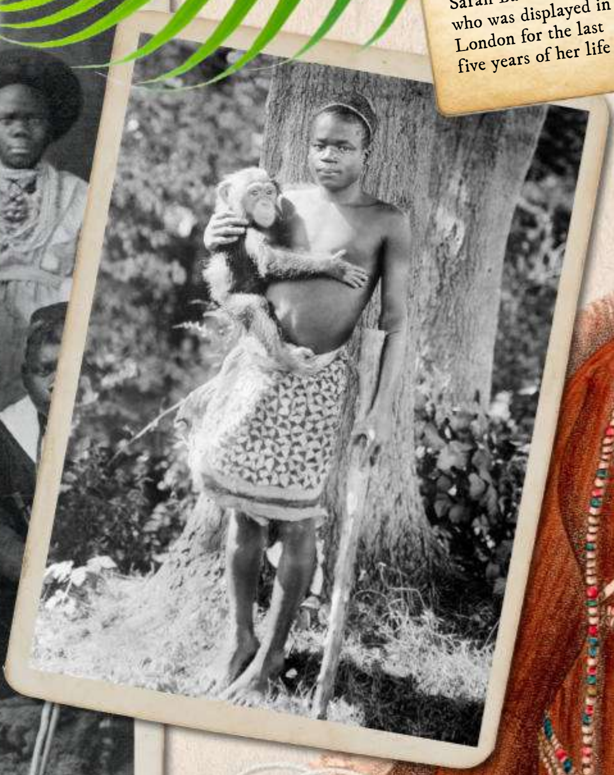
The 1889 Paris World's Fair, or the Exposition Universelle, is best remembered for introducing the world to the Eiffel Tower, but among the many exhibits was a disturbing display of over "400 indigenous inhabitants" in a mock-up described as a "Negro Village". What's more, the 1889 display was not the first to appear in the city, and was actually building on the success of the 1878 World's Fair, which had a similar exhibit.

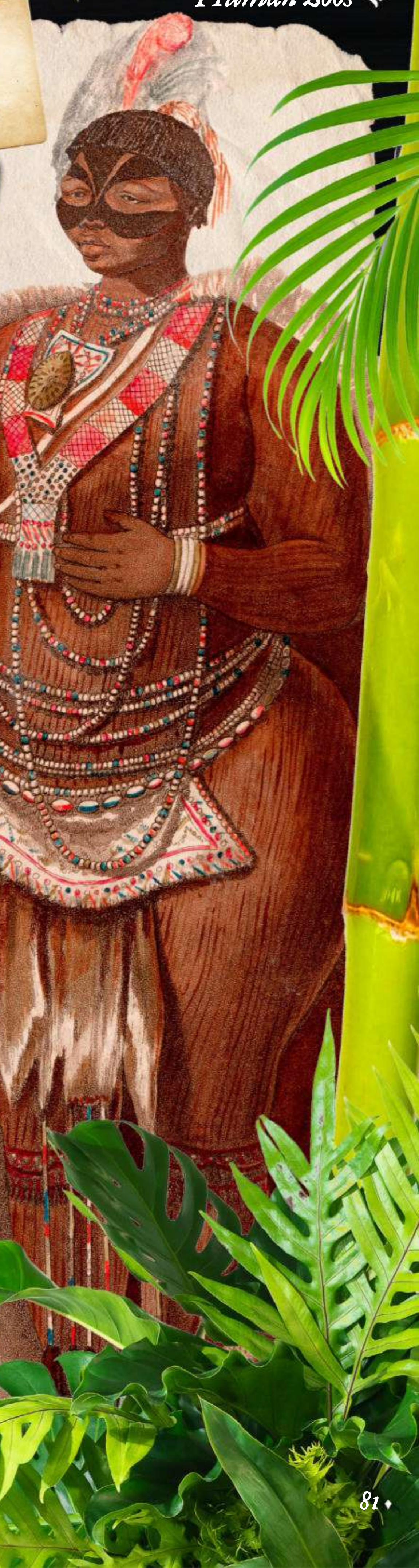
These exhibitions were also not the last in Paris. According to Marco D'Eramo in *The World in a Selfie: An Inquiry into the Tourist Age*, "Such villages were replicated at the 1900 exposition, visited by 50 million people, which hosted a 'living diorama' of Madagascar, and at the colonial expositions of Marseille in 1906 and 1922 and Paris in 1907 and 1931". The ruins of the Jardin d'Agronomie Tropicale, where the 1907 exhibition was hosted, can still be seen today.

One of the largest human zoos took place at the 1904 St Louis World's Fair. According to *Lapham's Quarterly*, some 10,000 indigenous persons (including Ainu persons from Japan and indigenous Americans) were exhibited at the Fair and lived within its grounds. But the story of one in particular has become renowned for its tragedy, that of the aforementioned Ota Benga.

A Mbuti person, Benga was kidnapped from the Congo and first displayed in St Louis, before being taken to the Bronx Zoo in 1906. Here he was kept alongside various primates. The Zoo's director defended the disgusting display as an "ethnological exhibit" but others were outraged at the blatant disregard for human life. In 1910, Benga was released into the care of the Reverend James







RIGHT
Sarah Baartman who was displayed in London for the last five years of her life

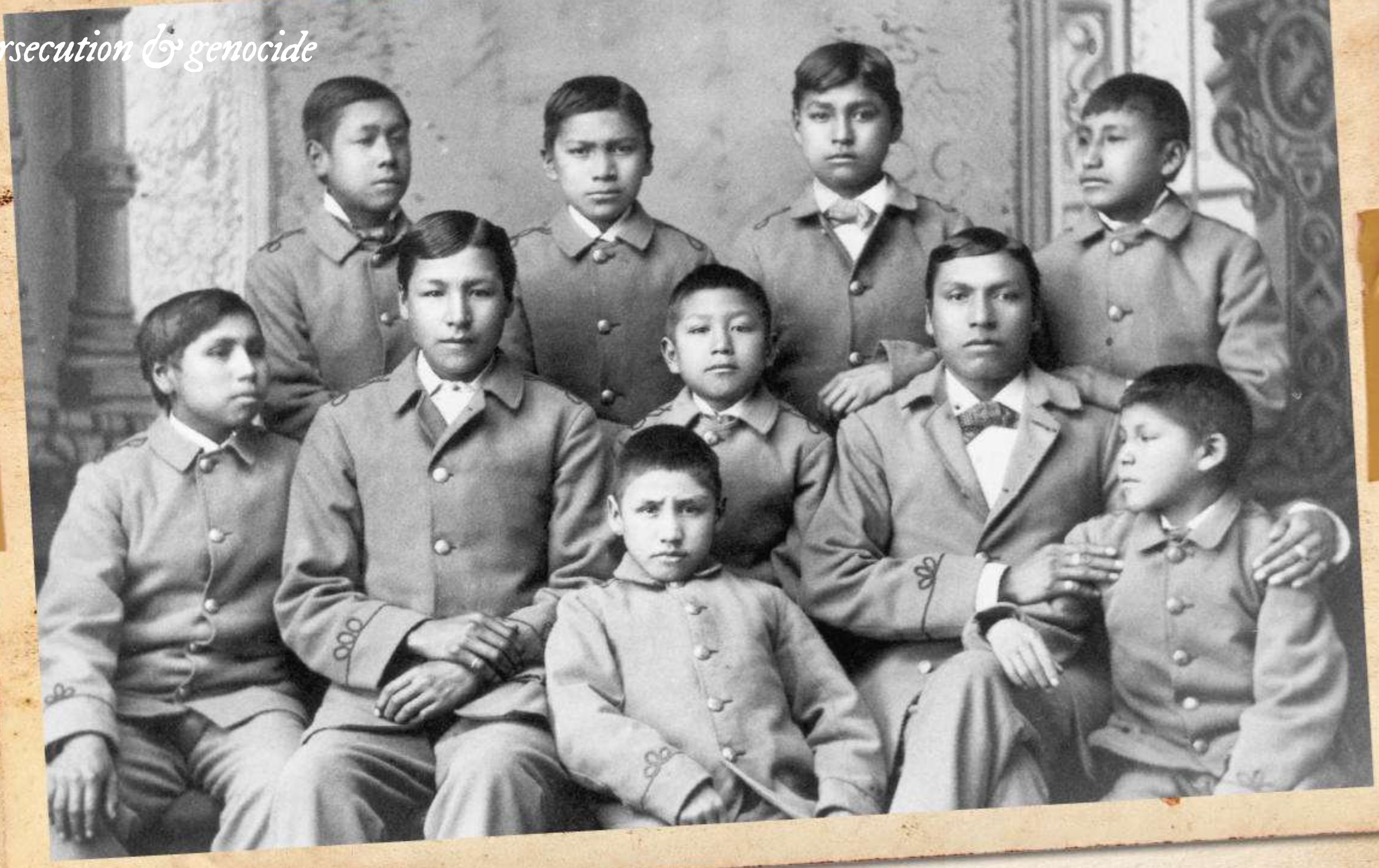
H Gordon, and lived in a Black community in Lynchburg, Virginia. However, he understandably suffered from depression and a mere six years later died by suicide.

The last known human zoo took place at the 1958 Brussels World's Fair, where a group of Congolese persons were displayed as part of an exhibit called "Kongorama". According to the *Guardian*, 598 persons were brought from Africa to staff the fair but after three months, the racial abuse and general conditions became too much. Following its closure, the shameful practice of human zoos were thankfully resigned to the pages of history. Rooted in racist and colonialist thought, human zoos are a distressing part of our past that should never be forgotten.

TOP-LEFT
A group of Congolese persons who were brought to Britain to tour around the country in 1905

ABOVE
Ota Benga's tragic tale is just one example of a human being exploited in human zoos

BELOW
The ruins of the Tunisia Pavilion at the Jardin d'Agronomie Tropicale, which can still be seen today



INDIGENOUS SCHOOLS

The American Indian boarding schools and Canadian Indian residential school systems forced Native North American children into institutions in an attempt to erase their cultural identities

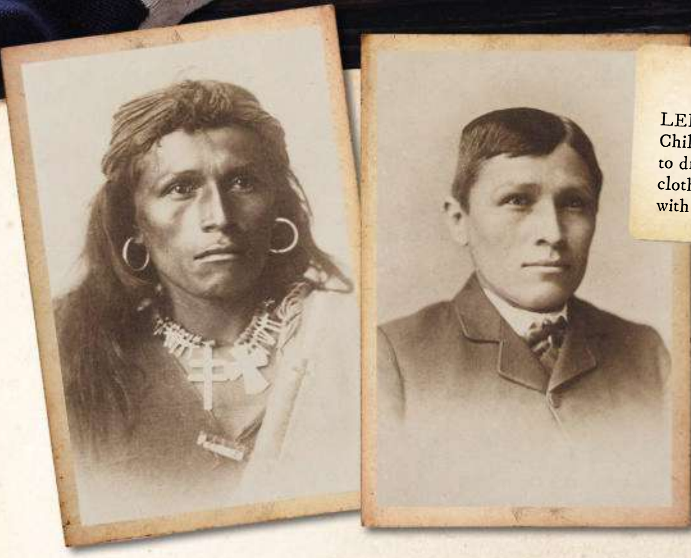
Written by Alice Pattillo

The atrocities the Native peoples of North America faced from European colonists began with them claiming the land for their own in the 16th century, but it didn't end there. The unspeakably harsh treatment and institutionalised racism continued up until the end of the 20th century in both the US and Canada.

Between 1883 and 1997, more than 150,000 indigenous children in Canada were taken from their homes and placed in boarding schools away from their families, where they were indoctrinated with Christianity and forced into manual labour. In the USA, the story was much the same. There were 408 government supported boarding schools of the same nature, running between 1819 and 1969.

Beginning in the USA, indigenous schools were born out of the government's ploy to move Native tribes westward, forcing them out of land they wanted for themselves. Natives were forced along what became known as the Trail of Tears, many losing their lives en-route, and the survivors relocated to barren places. Any resistance was met with brute force and numerous tribes were massacred by armed troops brought in to enforce the policy. However, it was deemed too expensive for the government to continue with, and as more and more white settlers moved west, they worried they were running out of land to relocate Native tribes to.

Instead, they joined forces with the church and turned their attention to forced assimilation. The church had been running missionary schools for Native Americans since the 17th century, where the goal was "to extend civilization and instruction to his ignorant race, and show them the way to heaven," according to the colonial Jesuit missionary Andrew White. As part of many of the agreements made between tribes and colonists, the US government was required to educate the Natives on their reservations. But, following



LEFT
Children were forced to dress in European clothing and cut ties with their cultures

the end of the Indian Wars and American Civil War, racism against Native tribes increased and attempts were made to use the educational system to assimilate the tribal populations, therefore clearing the way to claim ownership of Native lands. While the goal was supposedly 'cultural assimilation', the reality was a government-enforced attempt at cultural genocide. The plan went like this: schools would isolate younger generations of the tribal nations in order to erase their culture, remove them from the reservations and force them into the general population. This would then leave the government free to claim their land.

In 1876, Canada passed the Indian Act, requiring all Natives to speak either English or French. By 1894, attendance to either a day school or residential boarding school was made compulsory for First Nations children. In the US, it was made compulsory for indigenous children to attend one of these schools from 1877. Many Native people lived too far from a day school, so sending their children to a boarding school was the only way in which they could comply. What's more, these newer institutions were purposely located far away from the indigenous communities in order to reduce the childrens' contact with their families.

One of the most influential of the residential schools was Carlisle Indian School in Pennsylvania, opened in 1879. Its founder, General Richard Pratt, gave a speech in 1892 describing their philosophy of assimilation, infamously declaring "kill the Indian, and save the man" – highlighting the fact that white America saw Native tribes as barbarians who needed to be 'civilised'. Canadian prime minister, Ramsay MacDonald, echoed a similar sentiment, and is quoted as saying: "When the school is on the reserve, the child lives with his parents who are savages; he is surrounded by savages, and though he may learn to read and write, his habits and training and mode of thought are Indian. He is simply a savage who can read and write." Native parents had no option but to send their children to these institutions, otherwise they risked facing the punishments for those who refused – in 1895, 19 members of the Hopi tribe were sent to Alcatraz for protesting against their children being taken away from their care.

The conditions at the boarding houses were akin to contemporary orphanages – cramped and unhygienic. The institutions cut off their hair (long hair is a distinctive feature of indigenous North Americans, tied to spiritual belief and traditions), renamed them, banned them from speaking their native languages and forced them into slave labour for white families. Their culture was treated as a disease and bullied out of them. At the time the schools were running, stereotypes prevailed that Native people were good with their hands, so children were encouraged to go into manual trades rather than educated to university level. Programmes at the schools were designed to train them in vocational work that would benefit the white majority, while keeping them within the lower classes of society – it was a racist system of segregation that emphasised social class. On top of this, children were malnourished and subjected to physical, sexual and emotional abuse. Hundreds of Native children died while in the so-called care. Up until the 1950s, mortality rates in children were higher within Canadian indigenous schools than anywhere else in the country.

In the 1950s, many of the residential schools closed down and the system was substituted with an adoption project where Native children were forced into the foster system to be adopted by white families. The new project offered no improvement on care standards, as many continued to be abused. By the 1970s, post-civil rights movement, the Indian Child Welfare Act was passed and many of the remaining schools opted to change their policies and began to teach indigenous traditions. However, in 2021, 1,300 unmarked graves were unearthed in Canada on the site of five former residential indigenous schools, and it is estimated that between 3,000 and 30,000 children died in the schools across Canada, mostly from disease. In 2022 the US Interior Department reported that over 500 deaths at indigenous boarding schools have been documented, with over 50 grave sites, but they expect to find many more.

ABOVE
Photo of Esau Prescott, from the Ho-Chunk Nation, in his boarding school uniform

LEFT
Native children suffered malnutrition, cramped conditions rife with disease and were faced with daily manual labour at the boarding schools

BELOW
The schools aimed to erase the children's cultural heritage

©Getty; Alamy

Fatal FAMINES

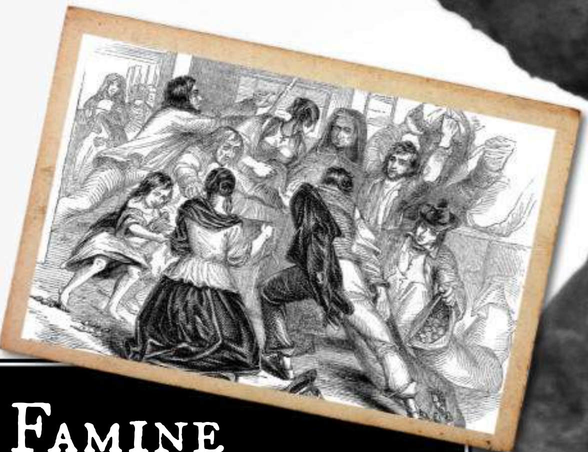
Discover the stories of some of the most catastrophic famines in history

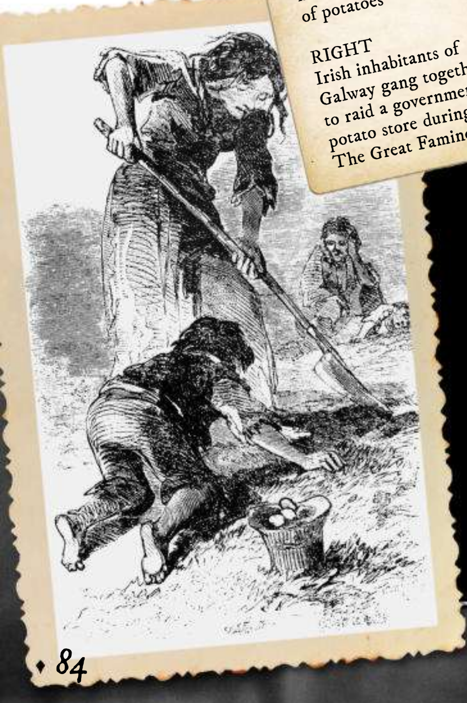
Written by Jessica Leggett

Famines represent one of the most devastating crises that populations across the globe can experience. They can be brought about by a variety of factors, ranging from inadequate agricultural practices and droughts to political decisions and wars. Join us as we delve into some of the most severe famines in history.

BELOW
An image depicting a starving family desperately trying to harvest a scant amount of potatoes

RIGHT
Irish inhabitants of Galway gang together to raid a government potato store during The Great Famine





Irish Potato Famine

For seven years between 1845 and 1852, Ireland was gripped by a devastating famine that killed around one million people. The Great Famine, also known as the Great Hunger or the Irish Potato Famine, was largely triggered by a water mould - Phytophthora infestans - that affected the potato crop and caused it to rot. This was a disaster because potato was the main source of food for a large portion of the Irish population.

Aside from the infestation that affected the potatoes, the dependence on a single crop was also a contributing factor, as well as the fact that the British government did little to intervene or offer aid. Initial efforts of the Conservative government to help came to an end when the Whig government succeeded them in June 1846. They adopted a laissez-faire approach, while food exports from Ireland to Britain continued despite the famine, which would ultimately go on to fuel anti-British sentiment and the fight for Irish independence.

Not only did many people die from disease or starvation during the Irish famine, but at least one to two million emigrated to escape it, further reducing the population and changing the country's demographic forever.

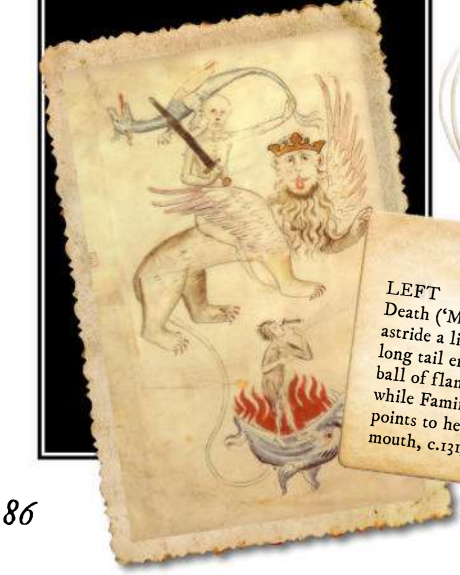
©Getty, Alamy

THE GREAT FAMINE OF 1315-17

In the 14th century, Europe faced several disastrous events, including the Great Famine of 1315-17. The famine began in 1315 due to unfavourable weather conditions such as heavy rain and a harsh winter, factors that also occurred in 1316 and 1317. These conditions caused crop failures and ruined the farmland so it yielded less food, leading to mass starvation, rising crime and even rumours of cannibalism. In England alone, it is estimated that at least 5% of the population died because of this catastrophe.

The famine was exacerbated by other issues, such as ongoing wars in Europe. Malnutrition had also left people weak and more vulnerable to disease while animals were decimated by diseases triggered by the poor weather. Even when the weather finally returned to a normal state, countries afflicted by the famine were slow to recover and so it continued until around 1322.

The Great Famine was significant, not only because of the loss of life but because of the social, economic and political consequences that ultimately shaped societies in Medieval Europe – for example, rebellions against the social hierarchy. Three decades later, Europe would experience the Black Death, which would devastate the weakened continent further.



LEFT
Death ('Mors') sits astride a lion whose long tail ends in a ball of flame (Hell), while Famine ('Fames') points to her hungry mouth, c.1315-17

RIGHT
Those who lived in the Volga Valley were severely affected by the famine of 1921

BELOW
Two boys with a cache of potatoes they found during the man-made famine

THE RUSSIAN FAMINE OF 1921-22

The Russian famine of 1921-22, also known as the Povolzhye famine, swept through Russia in the aftermath of WWI and the Russian Civil War. After almost seven years of violence and unrest, these events had caused economic disarray in the country, disrupting agricultural production and distribution. This led to a severe food shortage, also triggered by crop failure and drought.

A major factor that contributed to the crisis was Lenin's War Communism policies, in particular food requisitioning, which exacerbated the famine and left people without enough food to eat, with some desperately resorting to cannibalism. Although there is not an accurate record of how many people perished, it is generally agreed that at least five million people died as a result of the famine, making it one of the worst famines of modern times.

Although he initially refused international aid, Lenin eventually accepted help from foreign relief organisations, including the American Relief Administration and Save the Children – with the latter feeding over 300,000 children in Russia every day by the autumn of 1922.

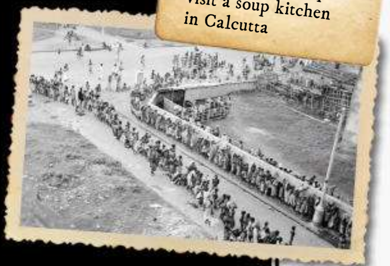
THE HOLODOMOR

An avoidable famine that killed 3.9 to five million people in Ukraine, the Holodomor – Ukrainian for 'death by hunger' – began in 1932 as a result of Soviet policies, starting with Stalin's rapid industrialisation programme, the First Five Year Plan, across the Soviet Union. The programme involved the collectivisation of agriculture, with Ukrainians forced off of their land and made to work on state farms.

Ukraine was one of the USSR's biggest grain producers and farmers were set extremely high quotas. If they didn't hit these, all of their food, including the seeds, were confiscated from households. Many farmers attempted to leave their homes to find food but the Soviets made it illegal for them to leave the country. When the Ukrainians tried to report the famine to authorities, local officials were ordered to seize even more from them.

The lack of food lead to malnutrition, starvation and even cannibalism. It is debated whether Stalin deliberately created the famine to try and end the Ukrainian independence.

THE BENGAL FAMINE OF 1943



BELOW
People queuing up to visit a soup kitchen in Calcutta

The Bengal Famine of 1943 was a devastating famine that took place in the Bengal region of British India during World War II. It was caused by a combination of factors, including the loss of rice imports due to the Japanese occupation of neighbouring Burma, rising food prices and poor inflation control, as well as the British administration – fearing a Japanese invasion of South Asia – exporting food to soldiers fighting in the war, prioritising this over the civilian food supply.

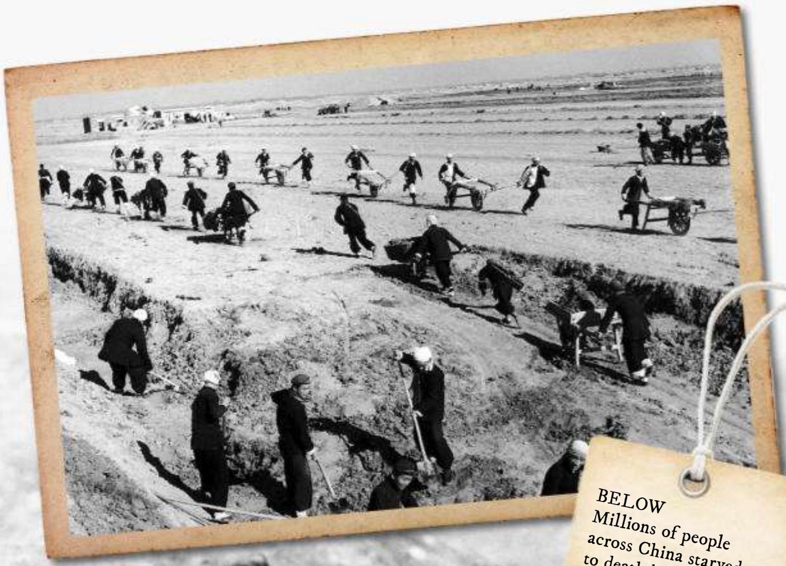
There were some natural disasters that impacted the harvest, for example infections in crops and a cyclone in 1942 that had caused damage to the rice crop that year. Nevertheless, many argue that the famine was largely the result of wartime factors and the British administration's slow and inadequate response to the crisis. While estimates vary, it is believed that around three million people died as a result of the starvation, malnutrition and disease that ran rife through the region, while over a million sold their land and moved, leading to large population displacement.

THE GREAT CHINESE FAMINE

When Mao Zedong launched his Great Leap Forward campaign in 1958, his aim was to modernise agricultural practices in China, bring industry to the countryside and increase grain production by creating communes of farmers, who would give a large portion of their crops to the state.

However, rather than increasing, agricultural production actually fell during this time, with reports exaggerating the size of the harvests in order to meet the official numbers that Mao proclaimed. As a result, officials seized most – if not all – of the grain harvest from communes to fill these quotas, even though this meant leaving people to starve. Private food production was also prohibited as part of the campaign and severe food shortages ultimately led to mass starvation, with an estimated 30 million people dying across China.

Despite official claims that bad weather was to blame for the poor harvests, the Great Chinese Famine is widely recognised as a human-made disaster, with officials doing nothing to solve it. Lasting until the end of 1961, it was the deadliest famine to occur in the 20th century, as well as one of the largest famines in history.



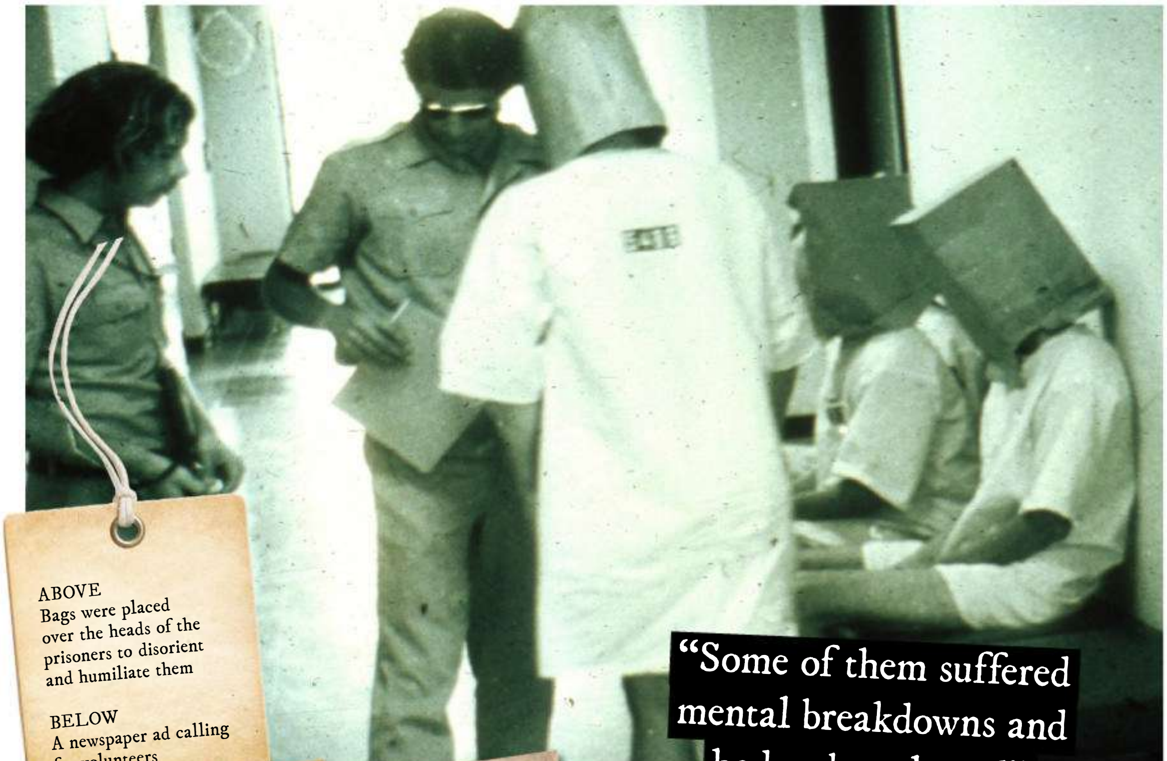
BELOW
Millions of people across China starved to death because of the Great Leap Forward

EVIL MEDICAL EXPERIMENTS

How human curiosity has had horrific results

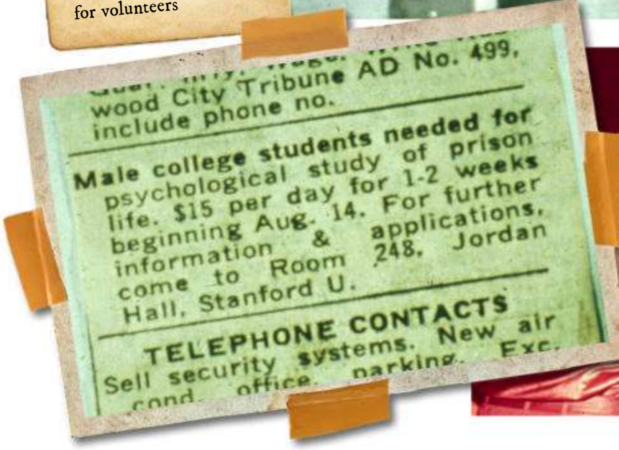
Written by Christopher Evans

In our thirst for knowledge and discovering more about ourselves, the human race has made some incredible achievements that have benefitted millions. Sometimes, however, the human race has inflicted unimaginable cruelty on itself in the name of science. Here we look at some of the worst medical experiments performed throughout history.



ABOVE
Bags were placed over the heads of the prisoners to disorient and humiliate them

BELOW
A newspaper ad calling for volunteers



wood City Tribune AD No. 499, include phone no.

Male college students needed for psychological study of prison life. $15 per day for 1-2 weeks beginning Aug. 14. For further information & applications, come to Room 248, Jordan Hall, Stanford U.

TELEPHONE CONTACTS
Sell security systems. New air cond. office, parking. Exc.

> “Some of them suffered mental breakdowns and had to be released”

The Stanford Prison Experiment

Taking place in 1971 at Stanford University and due to last two weeks, this experiment was terminated after only six days. Twenty-four male students were chosen to role play as either prisoners or guards in an experiment led by psychology professor Philip Zimbardo, designed to examine the effect it would have on human behaviour. The prisoners were ‘arrested’ at home and brought to the prison, where they were made to wear dresses and a chain around their ankle. Very quickly the subjects’ behaviour escalated. Prisoners rebelled and barricaded themselves in their cells, they turned on each other and told the guards if another prisoner broke the rules. Guards became aggressive and tyrannical, subjecting the inmates to such mistreatment and abuse dished out as punishment that some of them suffered mental breakdowns and had to be released. Zimbardo’s girlfriend, who had just finished her own studies at the university, came to observe his experiment and was horrified by what she saw. Her alarm caused Zimbardo, who himself had sunk into his role as ‘prison superintendent’, to re-evaluate the situation and bring it to a swift end.

ABOVE
A blindfolded prisoner accompanied by two of the ‘guards’

BELOW
In 2001, the University of Iowa issued a formal apology for The Monster Study

The Monster Study

Conducted in 1939, this experiment was so unethical and cruel that it was never published, out of fear it would be compared to the kind of tests conducted by the Nazis. In the 1930s it was theorised that people were born either with stutters or without. Dr Wendell Johnson, a speech pathologist working at the University of Iowa, was convinced that labelling children could impact the way they talked and even cause speech defects.

To prove his theory, Dr Johnson conducted ‘The Monster Study’. Twenty-two orphan children were chosen and split into two groups, both a mix of stutterers and non-stutterers. The first group were called ‘normal speakers’ and were told as such, and given plenty of support and positive feedback on their linguistic skills. The second group were told they were stutterers and warned not to speak unless they took great care to ensure their speech was perfect. The effects were dramatic - children who already had stutters grew worse, whilst some of those without developed them. The damage inflicted was permanent and in 2007, seven of the subjects won $1.2 million in damages after suing the state of Iowa.

THE UNIVERSITY OF IOWA
THE UNIVERSITY OF IOWA

© Getty; Alamy; Public Domain

LEFT
President Ford apologises to the family of Dr Frank Olson, who committed suicide after being drugged with LSD by the CIA

Project MK-Ultra

In 1953, in the midst of Cold War paranoia, the CIA started a covert programme to discover the secrets of mind control. Convinced the Soviet Union and China were already brainwashing US prisoners, the CIA approved Project MK-Ultra. These experiments explored the possibility of controlling humans to do the bidding of others by breaking down the mind using drugs and other psychological warfare, such as electroshocks and hypnosis. While some of the experiments appeared above board, with their subjects being volunteering students, many of the tests were inflicted on Americans who had no idea. The CIA would even slip their own staff doses of the hallucinogenic drug LSD and observe how it affected their work. One such employee, Dr Frank Olson, was spiked with LSD after voicing concerns over the CIA's use of his research in aerosol weapons. Shortly after he killed himself in suspicious circumstances.

Although many of MK-Ultra's documents were destroyed, the project was exposed in 1974. In the following congressional hearings, the CIA acknowledged its existence, but the details remain murky to this day.

> "The CIA would even slip their own staff doses of the hallucinogenic drug LSD and observe how it affected their work"

Separating Siblings

Robert Shafran had just started college in New York when he noticed that staff and classmates would constantly greet him by a different name. When he met this other person he was shocked to find that Eddy Galland was his identical twin, separated at birth and adopted to different parents. It got stranger when a third brother, David Kellman, saw their story on television and realised he was their long-lost triplet. Their reunion turned to horror when they discovered that they had been guinea pigs in a legal but questionable medical experiment during the 1960s. Child psychologist Peter Neubauer separated twins and triplets via an adoption agency to study the effects of nature vs nurture, sending them to different families of varied socioeconomic status. After uncovering the truth, the triplets struggled with their mental health and Eddy sadly took his own life. The experiment's research was never released, but it is known that there are many other siblings who have no idea they were a part of it.

Project 4.1

Following World War II, the US government had taken control of the Marshall Islands, located in the north Pacific. The islands' populations had suffered under Japanese control in the war and welcomed this change. This turned out to be short-lived, however, when in 1946, the US forced the small population of Bikini Atoll from their homes so that they could use the area for nuclear testing. As the fall-out drifted across the other inhabited islands, children would play in the 'snow' that fell from the sky.

The US made no attempt to warn or relocate the Marshallese in these areas. Instead they decided to observe the effects of radiation on humans, in what was to be known as Project 4.1.

The resulting radiation poisoning caused widespread sickness among the remaining populations and babies were born with severe deformations, some even without bones.

Decades after the testing, the islands' populations still suffer from cancers and other health effects. The psychological impact has resulted in high suicide rates. Thyroid cancer is common and affects the ability to sing, an important part of Marshallese culture.

CAUTION
RADIOACTIVE
MATERIAL

LEFT
A radioactive coconut taken from Bikini Atoll beach, on the Marshall Islands

RIGHT
The triplet brothers only discovered their real identity through a chance encounter

HORROR IN UNIT 731

One of the most horrifying secrets of World War II, the truth about Unit 731 was hidden for almost 40 years. The purpose of the facility was to study biological warfare, aiming to design a way to use disease on the battlefield to wipe out the enemy. Using captured soldiers and civilians as guinea pigs, scientists subjected them to horrendous human experiments, with an estimated 12,000 victims losing their lives.

Subjects were infected with different diseases including the bubonic plague and cholera. Syphilis victims would be forced to rape pregnant women so the effects of the disease on unborn babies could be examined. People were operated on while awake with no anaesthetic, their organs torn from their bodies so they could be freshly dissected. Others were forced into pressure chambers until their eyes popped.

As the war raged on and it was clear Japan was in trouble, the ghastly research was all destroyed, employees warned not to tell, and the surviving prisoners shot dead.

Unlike the experiments that took place in Nazi concentration camps, very few perpetrators from Unit 731 were ever caught or prosecuted, and even fewer have admitted their guilt.

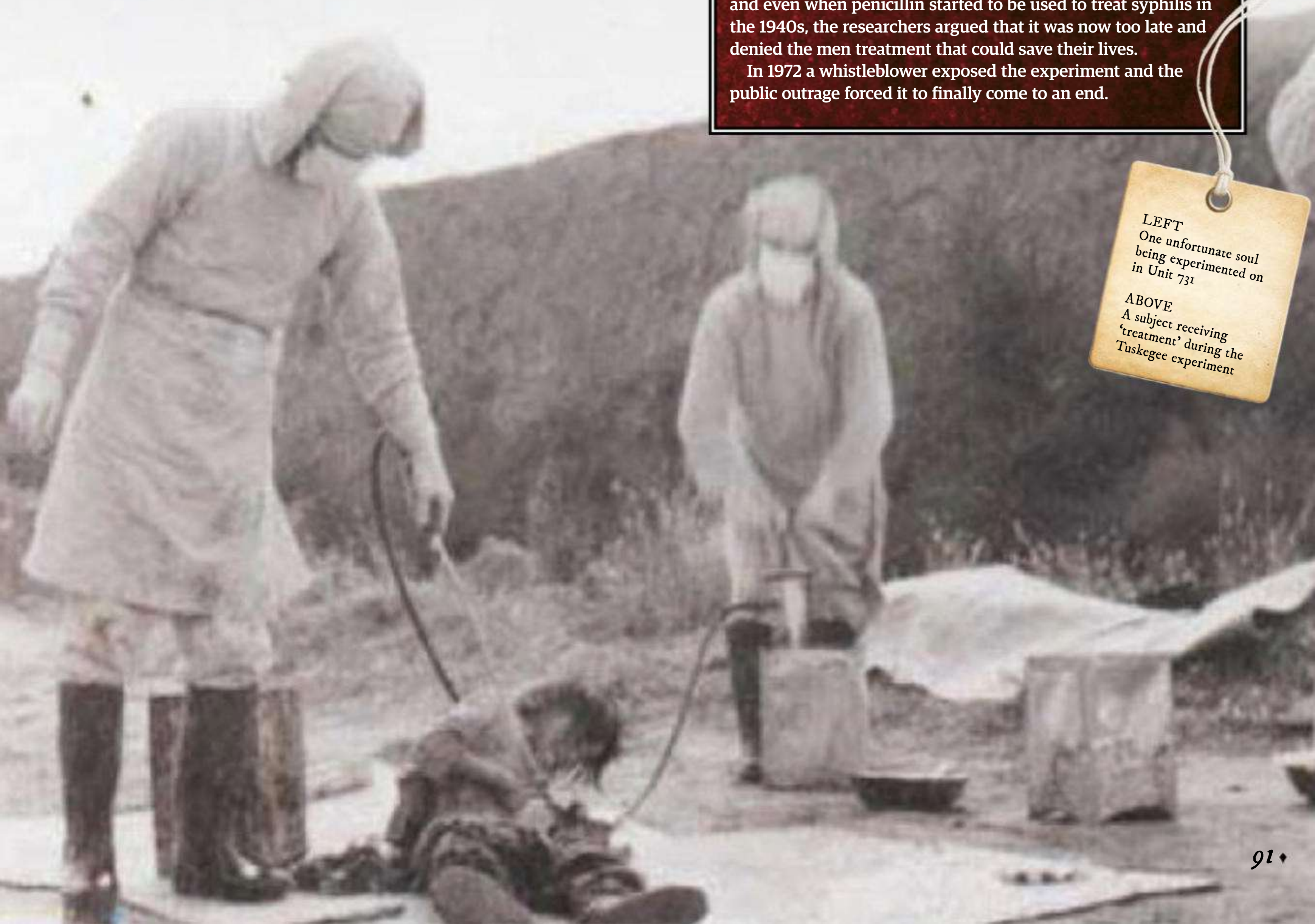
TUSKEGEE SYPHILIS STUDY

In 1932, 600 Black men in Alabama were offered free healthcare to take part in a medical trial, organised by the US Public Health Service. Told they were being treated for 'bad blood', the men were actually being monitored so scientists could observe the effects of syphilis. At the time scientific racism was common and white doctors incorrectly believed Black people were more likely to get syphilis and that their bodies were affected differently.

Initially told the trial would last six months, the men were given placebos and X-rays, made to take toxic treatments such as mercury and subjected to painful spinal taps. Left untreated, syphilis can result in blindness, organ failure, mental illness, and death. The men had no idea of the truth, and were left to be ravaged by the disease, also endangering the lives of their sexual partners. If the men died, their burial was paid for so that they could perform autopsies on the bodies.

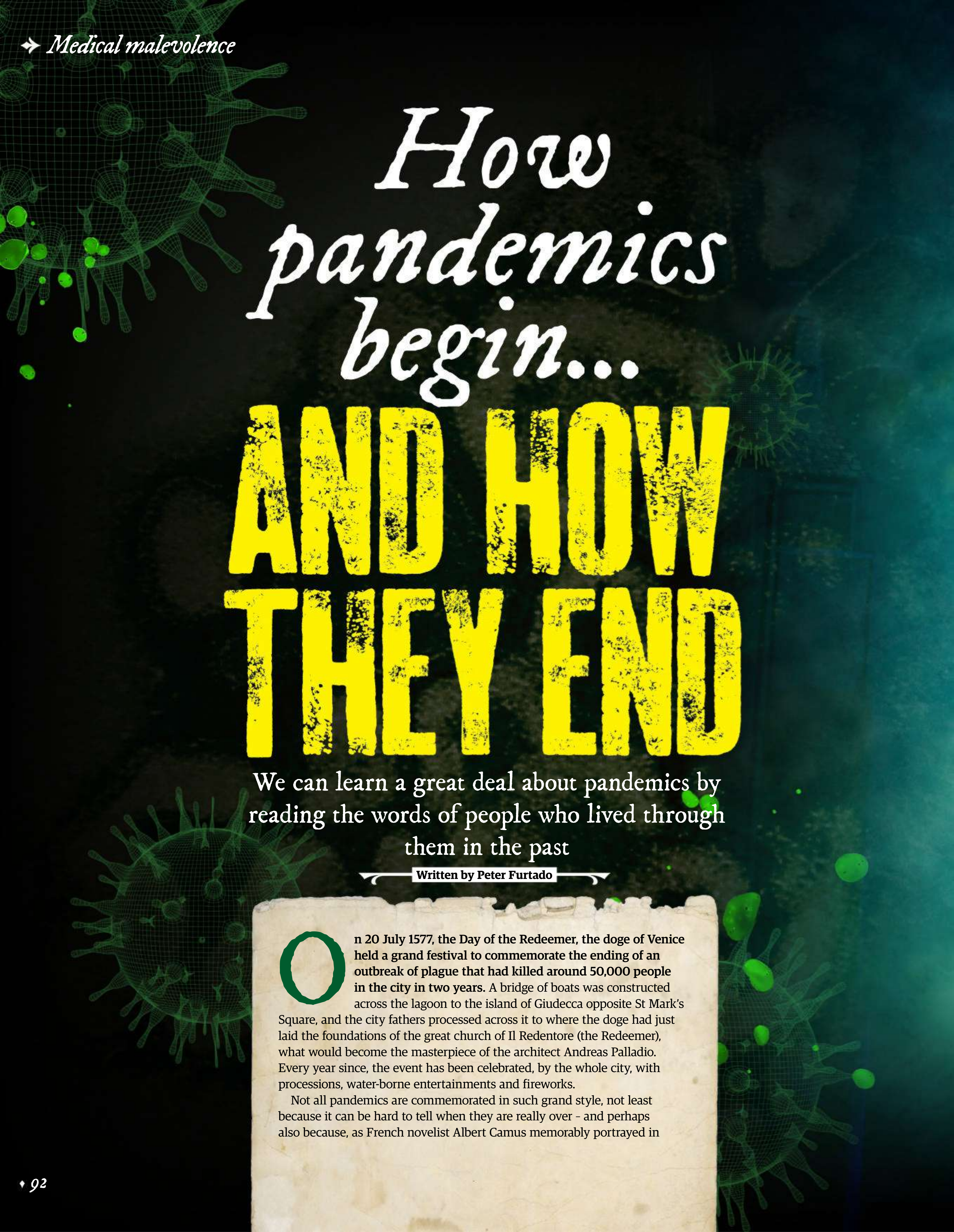
The trial extended for years beyond the initial six months, and even when penicillin started to be used to treat syphilis in the 1940s, the researchers argued that it was now too late and denied the men treatment that could save their lives.

In 1972 a whistleblower exposed the experiment and the public outrage forced it to finally come to an end.



LEFT
One unfortunate soul being experimented on in Unit 731

ABOVE
A subject receiving 'treatment' during the Tuskegee experiment



How pandemics begin... AND HOW THEY END

We can learn a great deal about pandemics by reading the words of people who lived through them in the past

Written by Peter Furtado

On 20 July 1577, the Day of the Redeemer, the doge of Venice held a grand festival to commemorate the ending of an outbreak of plague that had killed around 50,000 people in the city in two years. A bridge of boats was constructed across the lagoon to the island of Giudecca opposite St Mark's Square, and the city fathers processed across it to where the doge had just laid the foundations of the great church of Il Redentore (the Redeemer), what would become the masterpiece of the architect Andreas Palladio. Every year since, the event has been celebrated, by the whole city, with processions, water-borne entertainments and fireworks.

Not all pandemics are commemorated in such grand style, not least because it can be hard to tell when they are really over – and perhaps also because, as French novelist Albert Camus memorably portrayed in

The Plague, as soon as they seem to be over many people want to 'get back to normal', forget the horrors they have endured and perhaps the shameful choices they made. And often pandemics have simply not been seen as memorable public events that deserve commemoration. One such was the deadliest pandemic of modern times that caused perhaps 50 million deaths worldwide – almost 10 times as many as Covid, to date.

MEMORIES OF THE SPANISH FLU

In Europe the so-called 'Spanish flu' coincided with the final weeks of World War I, and struck many households that had already lost husbands, sons and brothers to the fighting. The pandemic mostly took place behind closed doors. The press was restrained, politicians took little note, workplaces and towns remained busy, and the whole pandemic was soon little more than a sad footnote to the far more public tragedy of the Great War.

Yet a pandemic, even one as destructive as the Spanish flu, is not all bad news. In December 1918, as the flu was raging across the world, American public health specialist George Price called it "both destroyer and teacher" – the unknown virus had already taught many lessons and raised questions that would have to be answered.

Professionals like Price have tried to learn the lessons from past pandemics to prepare for the next. Even in the best of all worlds it is not an easy matter to prepare for an attack by an as-yet unidentified enemy. Yet in 1972, Nobel-prize-winning immunologist Macfarlane Burnet believed the future of infectious disease as a medical specialism would be "very dull". There might, he said, be "some wholly unexpected emergence of a new and dangerous infectious disease, but nothing of the sort has marked the last 50 years".

> "THE SPANISH FLU PANDEMIC MOSTLY TOOK PLACE BEHIND CLOSED DOORS"

DEALING WITH PANDEMICS

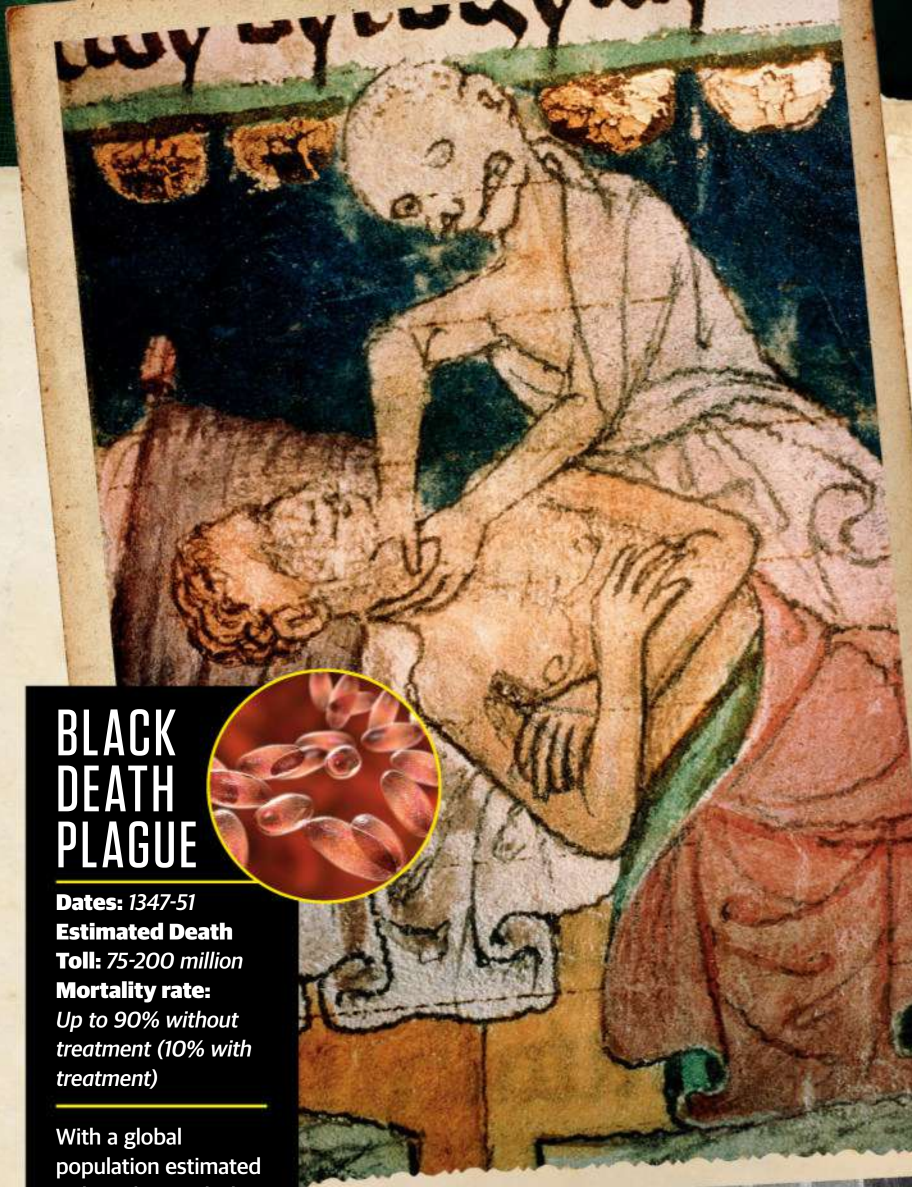
The half-century following Burnet's remarks has seen many more, and more diverse, pandemics than ever before. From HIV to Ebola, from Mad Cow Disease to Zika, from Legionnaire's Disease to Covid-19, the array of deadly novel pathogens has massively grown. And we have been forced to take ever more drastic action against them.

For Covid, we have been very fortunate in having unprecedentedly speedy and comprehensive knowledge of the outbreak and the pathogen, its genetic makeup and evolution, its impact on the human body and its spread through populations. Vaccines and treatments for it have been developed amazingly fast, despite many problems in collecting, sharing and acting on all this knowledge. Without all this, the impact would undoubtedly have been even worse.

It was also possible to build on the relatively recent experience of containing the impact of SARS (2002-04), swine flu (2009-10) and Ebola (2010s). A strategy for comprehensive international sharing of knowledge and skills, with the World Health Organization at the heart of the global response to ward off the next pandemic, was proposed by Bill Gates in *The Next Epidemic – Lessons from Ebola, New England Journal of Medicine*, April 2015. Yet in 2020, as had often happened in the past, the professionals were sometimes hindered by politicians failing to act fully on scientific advice or grandstanding for their own purposes. In some ways these politicians were acting like generals who are responsible for fighting the last war, suffering partly from lack of imagination as to what could happen next but also a poor understanding of what actually happened in the past.

PANDEMICS, WAR AND EMPIRE

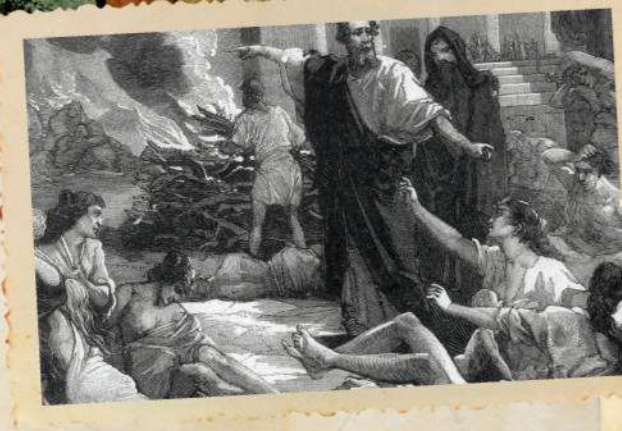
Pandemics have not only become more common but also more dangerous in their potential social and economic impacts, at the very same time as the scientific understanding of them has grown. This seems counter-intuitive but it is because, as William McNeill showed in *Plagues and People* (1976), they are, and always have been,



BLACK DEATH PLAGUE

Dates: *1347-51*
Estimated Death Toll: *75-200 million*
Mortality rate: *Up to 90% without treatment (10% with treatment)*

With a global population estimated to have been a little over 400 million in the 14th century, the Black Death killed 17-45 percent of the people on Earth, making it proportionately the most deadly event in recorded human history. The plague returned in subsequent years.



TOP
A 1376 illustration showing death strangling a victim of the plague

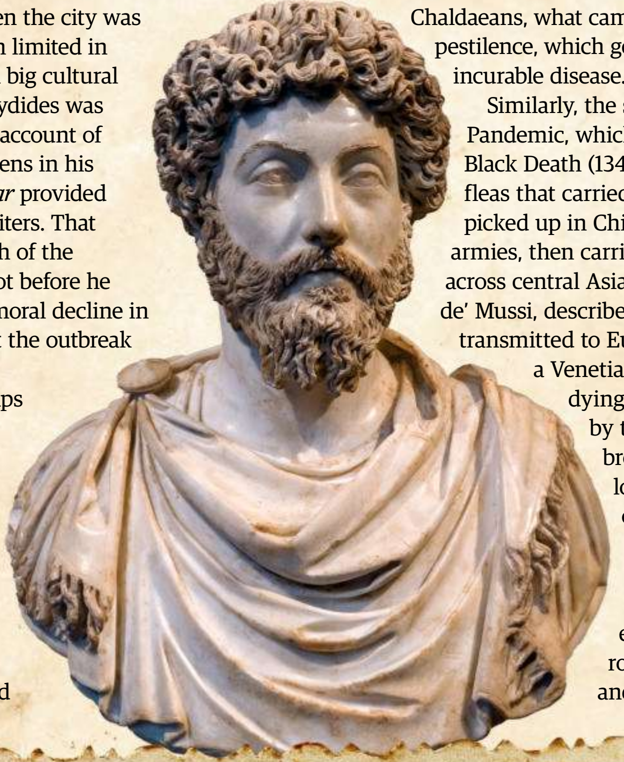
ABOVE RIGHT
The plague in Athens is believed to have killed a quarter of the city state's population

the product of three global trends that have accelerated exponentially in recent decades: environmental stress that causes pathogens to leap from their ancestral reservoirs in the natural world, the concentration of populations in cities, and the rapid mass transit of people across the globe.

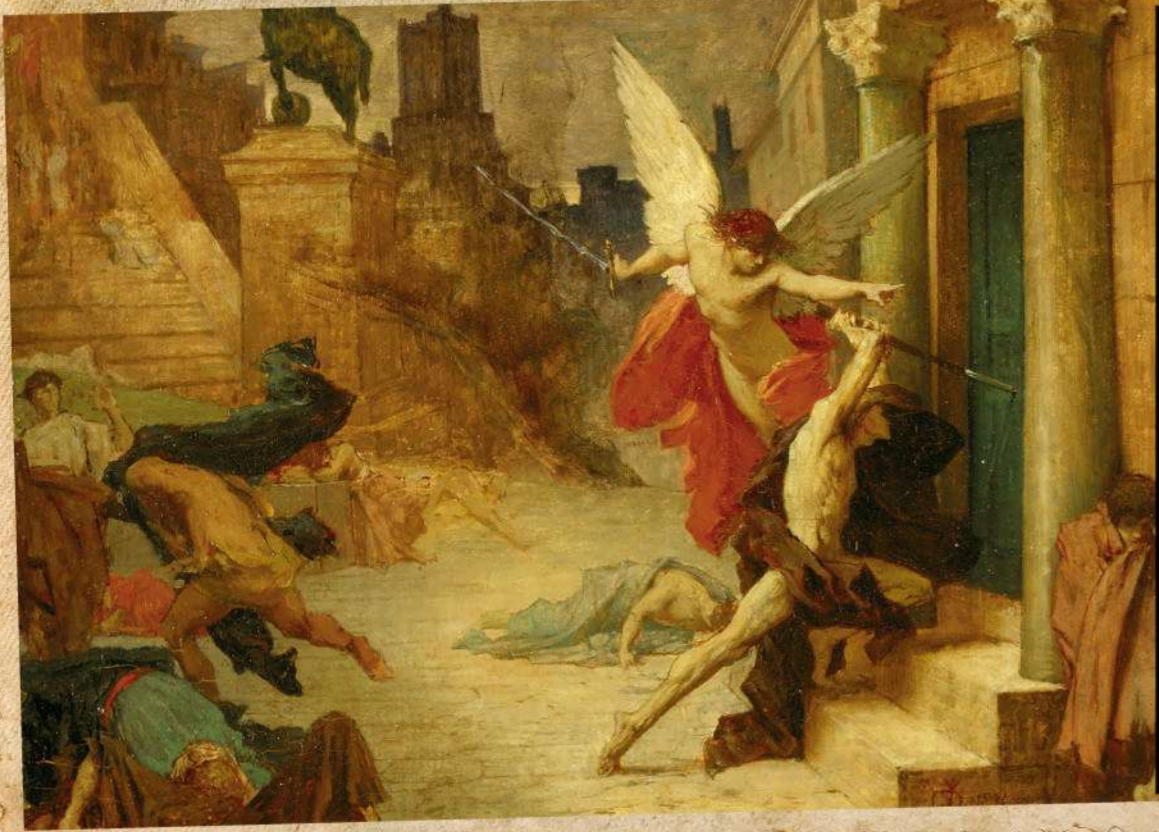
As a result, many pandemics (though thankfully not Covid) have been associated with war, conquest and empire. The first recorded pandemic, when a mysterious pathogen struck Athens in 430 BCE, hit in the early years of the Peloponnesian War, a time when the city was crowded with refugees. Though limited in its geographical impact, it left a big cultural footprint as the historian Thucydides was himself a victim, and his vivid account of its impact on the people of Athens in his *History of the Peloponnesian War* provided the blueprint for many later writers. That pandemic also caused the death of the Athenian leader Pericles, but not before he berated the Athenians for the moral decline in civic values and behaviour that the outbreak had caused.

The Antonine Plague – perhaps the first smallpox pandemic – struck the Roman empire in the mid-2nd century CE. It took the life of one emperor, Marcus Aurelius (180 CE) and perhaps that of another, Lucius Verus (169 CE), and was understood even by the Romans to be a direct result of war. In c.385 CE, the soldier and historian Ammianus Marcellinus explained in his *Roman History vol. 2*: "When Seleucia in Mesopotamia was stormed by the generals of Verus Caesar, the statue of Apollo Comaeus was torn from its place and taken to Rome, where the priests set it up in the temple of the Palatine Apollo. After this statue had been carried off and the city burned, the soldiers who were ransacking the temple found a narrow crevice; this they widened in the hope of finding something valuable; but from a kind of shrine, closed by the occult arts of the Chaldaeans, what came out was the germ of that pestilence, which generated the virulence of an incurable disease."

Similarly, the so-called Second Plague Pandemic, which began in Europe with the Black Death (1347-51), started when the rats' fleas that carried the plague bacterium were picked up in China by invading Mongol armies, then carried westwards by them across central Asia. An Italian trader, Gabriel de' Mussi, described how the disease was transmitted to Europe, at the Siege of Kaffa, a Venetian outpost in Crimea: "The dying Tartars [Mongols], stupefied by the immensity of the disaster brought about by the disease, lost interest in the siege. They ordered corpses to be placed in catapults and lobbed into the city in the hope that the intolerable stench would kill everyone inside. Soon the rotting corpses tainted the air and poisoned the water supply,

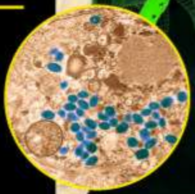


LEFT Emperor Marcus Aurelius was among those who died from the Antonine Plague



BELOW The Antonine Plague was most likely smallpox, but could also have been a measles outbreak

SMALLPOX



Dates: *4th century CE – 1980*
Estimated Death Toll: *500 million*
Mortality rate: *Up to 35%*

Until the vaccine for smallpox was developed, it was one of the most widespread and damaging diseases around and highly contagious. Rudimentary treatments were able to keep mortality rates down, but scarring, blindness and other consequences were common.

© Getty; Alamy

and the stench was so overwhelming that hardly one in several thousand was in a position to flee the remains of the Tartar army. Moreover one infected man could carry the poison to others, and infect people and places with the disease by look alone. No one knew, or could discover, a means of defence." The escaping Italians took the infection to Genoa, from where it quickly spread across Europe and the Middle East.

The European age of expansion, beginning with Christopher Columbus' first voyage to Hispaniola in 1492, saw dramatic pandemics associated with warfare and conquest. First to strike was a virulent strain of syphilis, which was first observed in July 1495 among soldiers at the Battle of Fornovo, between a French army and an alliance of Italian states. In his *History of Italy, Volume I* (1530s), the Italian historian Francesco Guicciardini observed: "Among all other calamities which overwhelmed Italy by this invasion of the French, or were at least attributed to it, a new distemper broke out, by them called the Neapolitan, but by the Italians the French disease, because it showed itself first among the French while they were at Naples, and on their return was spread all over Italy… However, the French ought in justice to be cleared from this ignominious imputation, for it afterwards plainly appeared that the distemper was brought to Naples from Spain. Nor was it the product of that country: it was conveyed thither from those islands which, about this time, through the means of Christopher Columbus, a Genoese, began to be known in our hemisphere." Historians continue to debate this last point; it is possible that several of Columbus' sailors were with the French army at Fornovo.

Within a few years of Columbus' landfall in North America, smallpox and measles – diseases long endemic in Europe and therefore relatively mild to Europeans – began to spread among the native Americans who had no such natural immunity. The Spanish conquistadors in both Aztec Mexico (1519-21) and Inca Peru (1532-33) faced opponents already significantly weakened by these diseases; and in the decades after their conquests were complete the native populations suffered even more grievously. By 1541, the Spanish missionary Toribio de Benavente Motolinía described what had happened in Mexico: "When Hernando Cortés was captain and governor… there was in one of his ships a negro stricken with smallpox, a disease which had never been seen here… When the smallpox began to attack the Indians it became so great a pestilence throughout the land that in most provinces more than half the population died; in others a little less. For as the Indians did not know the remedy for the disease and were in the habit of bathing frequently, whether well or ill, and continued to do so even when suffering from smallpox, they died in heaps, like bedbugs. Many more died of starvation, because, as they were all taken sick at once, they could not care for each other, nor was there anyone to give them food."

Europe's cholera pandemic of the mid-19th century, too, was a rarely noted consequence of imperialism. The disease had long been endemic in the Ganges region of Bengal, but British armies encountered it for the first time in 1817 and took it back to Europe, where it spread in the insanitary cities of the Industrial Revolution. This development was not inevitable, as Scottish medic James Copland explained in *Of Pestilential Cholera* (1832): "It appears extremely singular that… no means of preventing the propagation of the malady were resorted to during the number of years it has existed in

THE FIRST VACCINE

How the eradication of smallpox impacted our understanding of pandemics

Smallpox has been traced back as far as the Ancient Egyptians, with evidence of its effects left on the bodies of mummies, however its origins remain unknown. The first written description of something like smallpox comes from 4th century CE China.

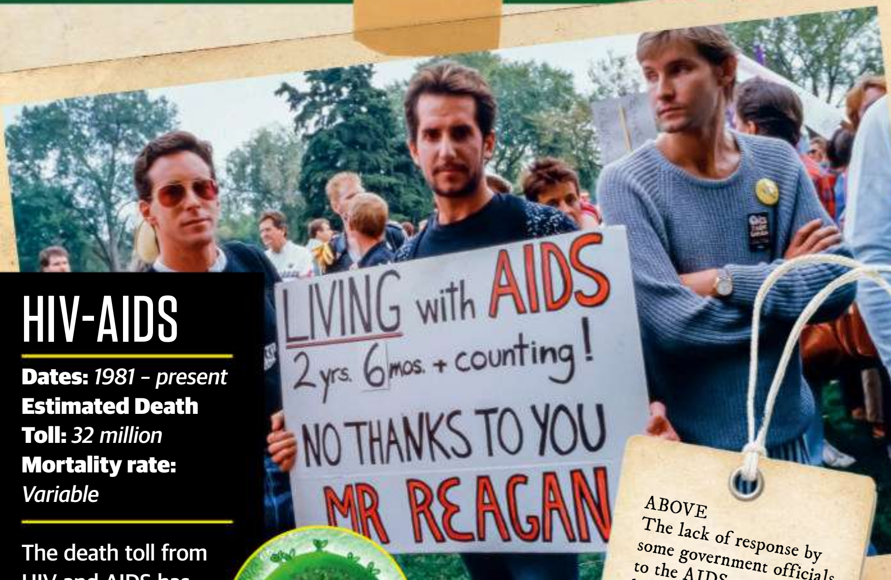
For centuries, smallpox was a reality of life on our planet, with outbreaks often associated with new trade routes and civilizations coming into contact with one another for the first time, sometimes possibly even due to deliberate exposure.

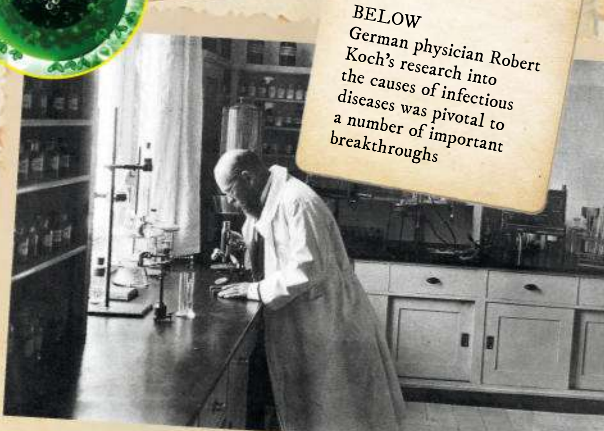
With 30 percent of people infected with smallpox dying from the disease, many attempts were made to cure or control it, such as exposing people who had never had smallpox to sores from the infected to trigger an immune response, a process called variolation. It was in 1796 that Edward Jenner noted that milkmaids who'd caught cowpox were seemingly immune to smallpox. He went about proving his case and wrote a paper in 1801 entitled *On the Origin of the Vaccine Inoculation.* Vaccinations followed and were gradually adapted. The first vaccine had been created, however it was not until 8 May 1980 that the World Health Assembly was finally able to declare the world free of smallpox after decades of global vaccination efforts.

HIV-AIDS

Dates: *1981 – present*
Estimated Death Toll: *32 million*
Mortality rate: *Variable*

The death toll from HIV and AIDS has been massive, but quantifying its mortality rate at this time is very hard as modern treatments have made the virus manageable as a chronic illness rather than something that is automatically going to be fatal. It remains incurable and 680,000 people still died from AIDS-related illness in 2020.

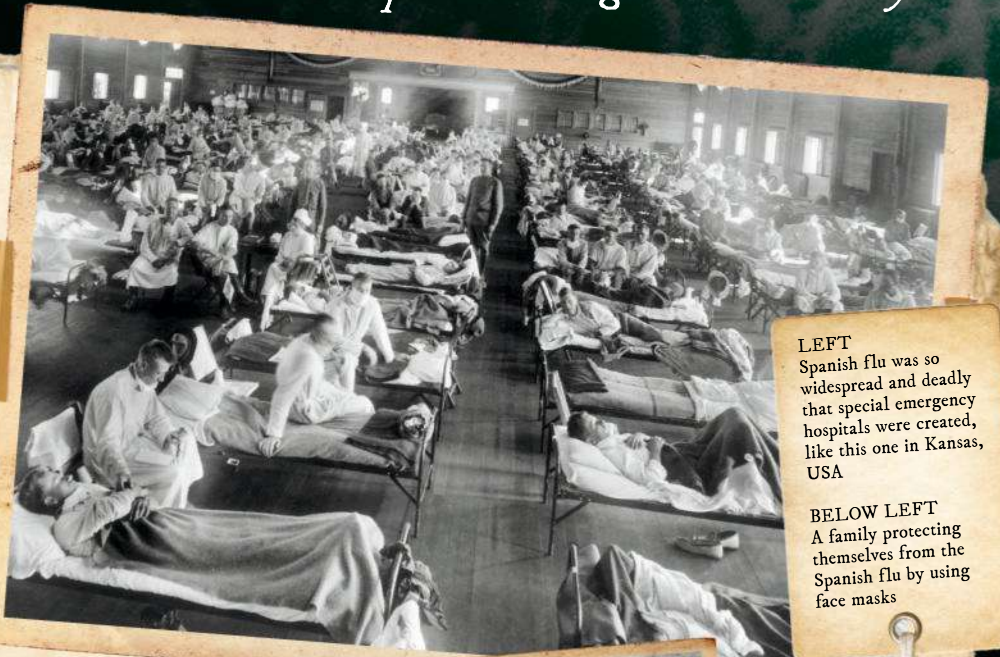




ABOVE
The lack of response by some government officials to the AIDS pandemic led to massive protest movements

BELOW
German physician Robert Koch's research into the causes of infectious diseases was pivotal to a number of important breakthroughs

the east. Surely... the natives of the country, and the European population under the British dominion had a right to expect that those placed to watch over their health... would have attended to the unequivocal opinions expressed by a number of the best informed medical officers... That no precautions of any description were taken in India to prevent the extension of the disease may be stated without any reservation; and hence most probably the reason of its extension over so very large a portion of the whole globe."



LEFT
Spanish flu was so widespread and deadly that special emergency hospitals were created, like this one in Kansas, USA

BELOW LEFT
A family protecting themselves from the Spanish flu by using face masks

PROFESSIONALS FIGHT BACK

Cholera, like plague, syphilis, typhus and other bacterial diseases, has been generally tamed by antibiotics, though localised outbreaks may occur. And some diseases have been wiped out through massive public health work: notably smallpox, which was declared eradicated in the wild in 1980 after a mass immunisation effort; and polio almost so. Both eradication efforts were hampered by distrust of the vaccine: the polio vaccine has been greeted with suspicion by some Sharia law scholars, especially in Pakistan and Afghanistan (the only places this disease still exists in the wild), while compulsory smallpox vaccination has been resisted by some libertarians who deny the right of the state to force them to put foreign material in their bodies, ever since the mid-19th century.

An impulse to 'build back better' has sometimes, though not always, been a response to the passing of a pandemic. Public health professionals, rather than politicians, have usually been at the forefront of efforts to prevent the conditions for the next wave of disease. Though the pathogen that caused cholera had not yet been identified, in the 1840s and 1850s British reformer Edwin Chadwick and doctor John Snow demonstrated the necessity of clean water and improved sewerage to end its scourge in London. Similarly in Bristol, William Budd was able to reduce the impact of typhus by improving the water supply. Louis Pasteur, Robert Koch and others began to identify the bacterial pathogens for infectious diseases from the 1870s. However, opposition to the 'germ theory' of disease, even from within the medical establishment, meant it was not until 1882-93 in Hamburg that Koch, who had already identified the bacterial pathogens for tuberculosis, anthrax and cholera, conclusively demonstrated that cholera was a bacterial disease spread in water, not in the air or dirt.

This breakthrough was the beginning of a new era of public health work in the face of a potential pandemic. In his book *On the Bacteriological Diagnosis of Cholera* (1894), Koch wrote: "The proper field of bacteriological work is the beginning and the end of an epidemic, when all depends on the correct judging of each individual case, and the swiftest possible prevention of danger to the neighbourhood. In former times the beginning and end of a local epidemic could hardly ever be recognised with the necessary certainty; they were to a certain extent veiled, so that one could indeed trace the rude lines of the epidemic proper, but generally lost the thread towards the beginning and the end. Hence too it came that the first measures were taken too late, and, when the epidemic began to abate, the efforts to combat it were stopped much too early. A material change has taken place in these respects."

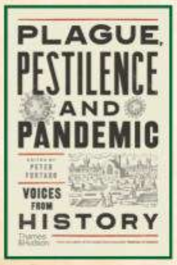
For this vision to be complete required – and still requires – three more conditions: the speedy identification of the pathogen (especially a novel one), the political will to implement the necessary actions in a timely manner, and the will of the people to accept them. In those key respects, nothing has changed.

"WITHIN A FEW YEARS OF COLUMBUS' LANDFALL, SMALLPOX AND MEASLES BEGAN TO SPREAD AMONG THE NATIVE AMERICANS"

SPANISH FLU

Dates: *1918-19*
Estimated Death Toll: *17-100 million*
Mortality rate: *2.5%*

It's believed that around 500 million people caught the Spanish flu between spring 1918 and summer 1919, which was about a third of the population of the world at that time. It was a strain of H1N1, also known as swine flu, and likely didn't originate in Spain, but it was the first nation to report it.



Plague, Pestilence and Pandemic: Voices from History by Peter Furtado is available now from Thames & Hudson

© Getty; Alamy

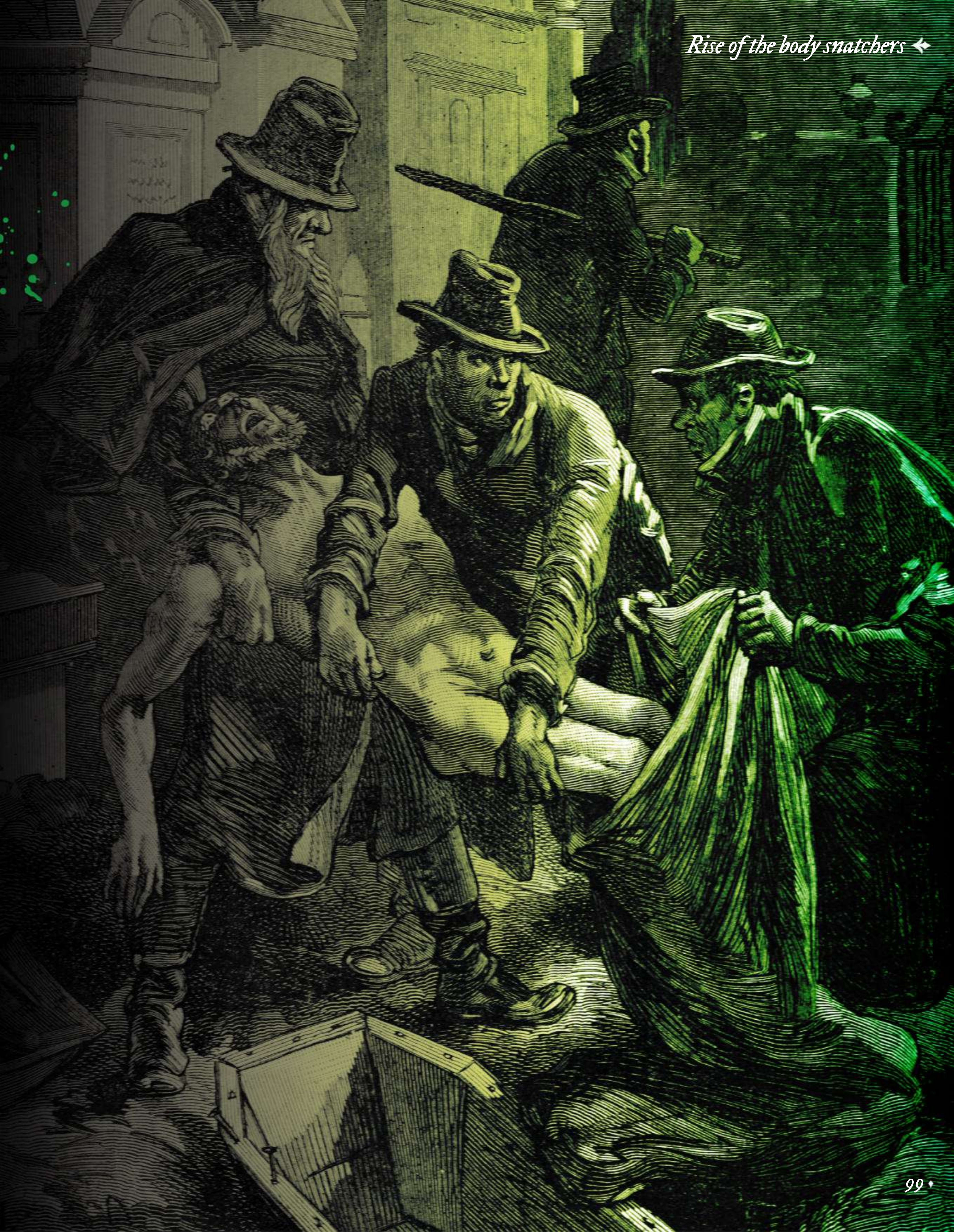
Rise of the BODY SNATCHERS

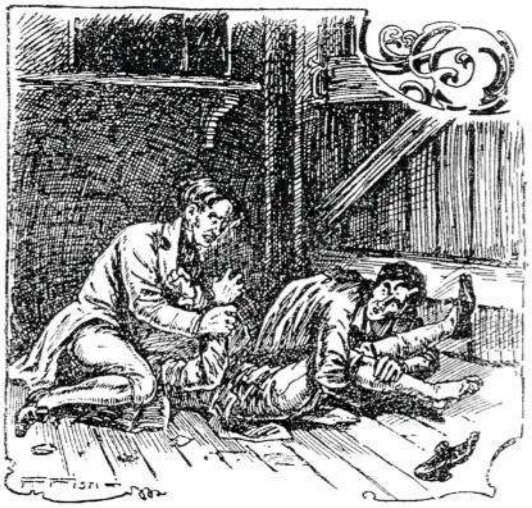
In the 18th and 19th centuries dark shadowy figures prowled Britain's graveyards seeking fresh bodies for the country's anatomy tables

Written by Callum McKelvie

The cemetery is as quiet as the grave, except for a lone figure silently shovelling earth, digging deep for the casket buried below. As his spade strikes the coffin lid, he grins malevolently – he'll be paid handsomely tonight. Grave robbers have become something of a gothic cliché, a trope of horror films and stories, yet during the 18th and 19th centuries body snatching was not only very real but incredibly common. "There were two 'peaks' to the body snatching trade: the last decades of the 18th century and the first of the 19th, and then again around 1826-28, just before Burke and Hare were caught for the murders they committed in Edinburgh," explains Suzie Lennox, author of *Bodysnatchers: Digging Up the Untold Stories of Britain's Resurrection Men.* During these two periods the so-called 'resurrection men' could be found prowling Britain's graveyards in search of fresh cadavers. But why was there such a demand for dead bodies, and who was buying them?

During the 18th century, the medical world found itself handcuffed by antiquated laws. Scientific research methods had improved and there was a new emphasis on a student's practical knowledge of the body. Yet here lay the problem as, until the Anatomy Act of 1832, dissection could only be carried out on a small number of legally granted cadavers. In 1505 James IV granted the use of criminals' bodies for dissection to The Worshipful Company of Barber Surgeons in Edinburgh and in 1540 Henry VII had followed suit, permitting the same in England and Wales. Yet this set the yearly quota at just four corpses and although the Murder Act of 1752 established procedures for the post-mortem of murderers, the act of dissection was seen solely as a punishment for the convicted and not a purely scientific endeavour. The use of anatomy as punishment was linked directly to the strong Christian beliefs that prevailed at this time. How could one hope for any sort of life in the spiritual hereafter if one's body





had been physically destroyed? However, the growing interest in anatomical research meant that the number of available corpses (a yearly average of 12 between 1752 and 1832) was no longer enough. And if there's a demand, there's always someone willing to supply it.

Enter the resurrection men, commonly known as body-snatchers. These were individuals who, for a price, would ensure that any young medical student seeking extra 'material' had their orders filled. "Body snatching as a 'professional' occupation didn't really start to take shape until the end of the 18th century," Lennox explains. "Up until then the students and anatomists would have carried out their own raids in graveyards, acquiring cadavers as and when they could." Unusually, the act of body snatching in and of itself was not illegal – the crime lay in the theft of any items on the body and in the act of dissection. "If the burial shroud or other items of clothing were stolen along with the corpse then this escalated the crime to a felony," Lennox tells us. "It's for this reason that cadavers were always stripped as soon as they were out of the coffin." And if the job was pulled off correctly, it could be extremely lucrative for the thieves.

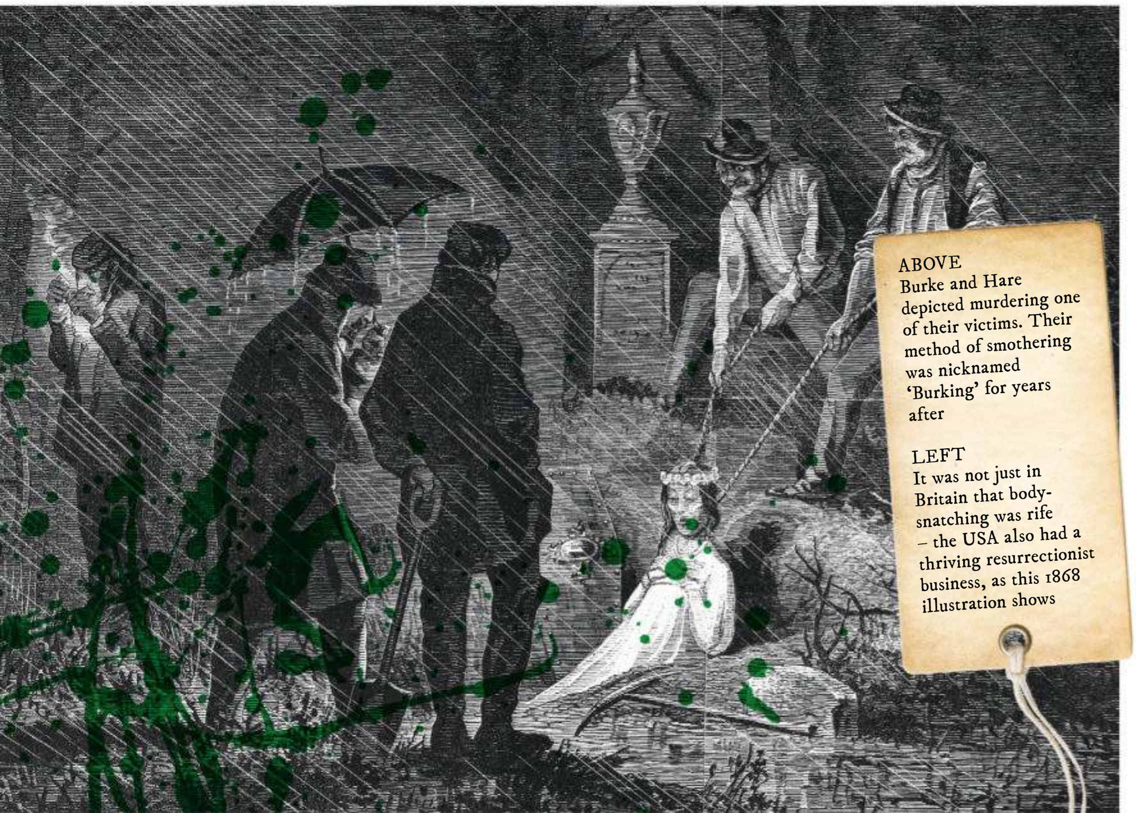
"As the 18th century drew to a close, a cadaver was fetching around two guineas for an adult, and a child's corpse was priced at 6s for the first foot and the 9d per inch thereafter," Lennox explains. However as the 19th century began, demand steadily increased and by the 1810s, the price for an adult had doubled. "Adult corpses, that was any corpse that measured over three feet in length, were now costing £4 4s and children were being priced by the inch," continues Lennox. "Demand was so great that by the time the Anatomy Act was passed in 1832, a cadaver could fetch as much as 16 guineas. To help put this into perspective, common living expenses, for example, cheese, could cost 2d for 1lb or a glass of gin 3d, or the same as 45 days' pay for a skilled labourer."

Over time the resurrection men developed a number of techniques to help in the disinterment of a corpse. "Graves of the recently deceased would be targeted, even those buried the same day didn't escape," explains Lennox. "The body-snatchers would dig down at the head end of the coffin, piling the soil onto the other end, to eventually act like a cantilever. This would have been done with wooden shovels so as to deaden the noise when hitting stones. Once the thud against the coffin lid was heard, a crowbar or some other tool would have been placed under the lid of the coffin and the lid prised off, the soil that had been heaped on the other end helping it to snap across the chest area. Once open, either hooks or ropes would have been attached to the cadaver and the corpse pulled out with a number of stiff tugs. All of this would have ideally been carried out on a moonless night, which offered more cover against being caught. If done right, this process could take no more than an hour."

One of the best resources regarding our knowledge of how the resurrection men operated is James Blake Bailey's *The Diary of a Resurrectionist,* published in 1896. As the title suggests, this book contains portions of a journal kept by an actual resurrectionist, Joseph Naples, a cemetery keeper turned body-snatcher. The journal gives details of how Naples went about his work. Usually, he would remove the body before the grave was given its final tidying – the upturned earth not arousing any suspicion. Naples would then place the cadaver in a sack, fill in most of the grave and then place the corpse close to the top as he replaced the remaining dirt. This meant that it was relatively easy for him to uncover the corpse and ensure the grave looked undisturbed. In order to avoid being caught in the street heaving bodies around, Naples made use of out-houses belonging to the colleges he supplied to store the corpse until the time of delivery.

In London, so high was the demand for cadavers that body-snatching gangs were formed. The Borough Gang dominated the London body-stealing market during the 1810s and virtually obliterated any competition. "They held the monopoly of the corpse supply business in London, supplying cadavers to the teaching hospitals of Guy's and St Thomas' and St Bartholomew's as well as the numerous private anatomy schools that were springing up unchecked in the area," says Lennox. The gang had a number of leaders throughout its years of operation, the first of which was Ben Crouch. "Crouch was a strong influence and basically ruined the chance of any lone body-snatcher working again – spoiling any graveyard they'd targeted or telling the authorities about their crimes," Lennox explains. "Either way, the only option available to such individuals was usually to join the Borough Gang as a way of ensuring a steady income." However, no Borough Gang leader was more notorious than Patrick Murphy who, according to a confession by one James May, was "able to go to the Keeper of different grounds and pay them handsomely for the run of the grounds." An example of this can be found in the case of Holywell Mound. The Borough Gang bought exclusive access to the cemetery from its sexton. However, when two rival resurrectionists revealed their scheme, an angry mob descended on the cemetery and found almost every grave empty. Furious, they flung the terrified groundsman into a pit and attempted to bury him alive, before the

"The act of dissection was seen solely as a punishment for the convicted and not a purely scientific endeavour"

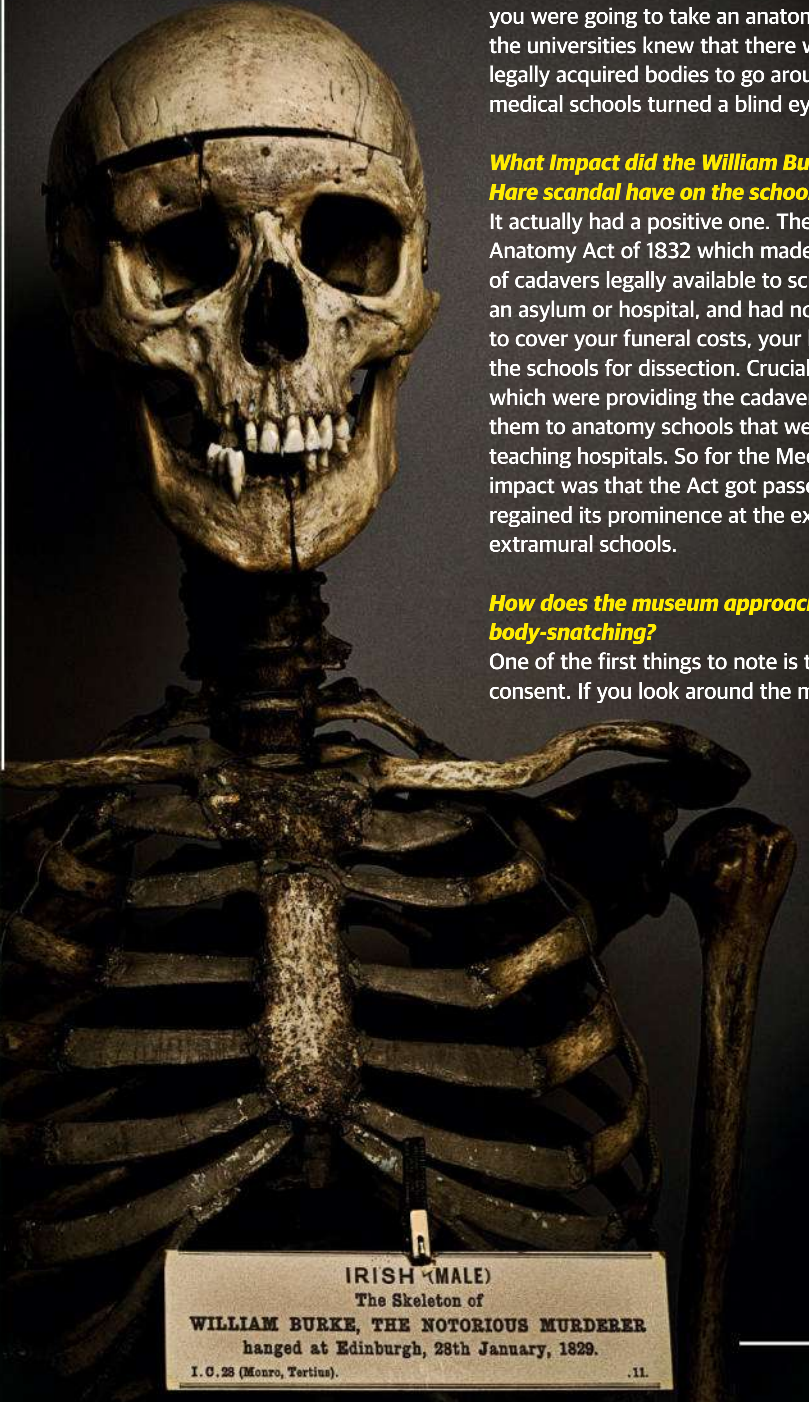


ABOVE
Burke and Hare depicted murdering one of their victims. Their method of smothering was nicknamed 'Burking' for years after

LEFT
It was not just in Britain that body-snatching was rife – the USA also had a thriving resurrectionist business, as this 1868 illustration shows

PRESERVED FOR POSTERITY

Malcolm McCallum, curator of the Anatomical Museum in Edinburgh, tells us about the city's history of grave-robbing and the skeleton of William Burke


IRISH (MALE)
The Skeleton of
WILLIAM BURKE, THE NOTORIOUS MURDERER
hanged at Edinburgh, 28th January, 1829.
I. C. 28 (Monro, Tertius).
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Tell us about yourself and the museum...
I'm the curator of the Anatomical Museum and to all intents and purposes we are the Museum of Edinburgh Medical School. The medical school itself goes back to 1726 and our collection really tells the story of how anatomy was taught at the university over a period of 300 years. As part of that, we have a lot of human remains.

What was Edinburgh Medical School's attitude towards body-snatching and its students' procurement of bodies for research?
As far as I'm aware, it was tacitly acknowledged. The trade itself had existed for some time and wasn't just a 19th century phenomenon – there's reports of grave-robbing in Edinburgh around 1710-11. During the 1820s you had to dissect a body if you were going to take an anatomy degree and the universities knew that there weren't enough legally acquired bodies to go around. Essentially, the medical schools turned a blind eye to the trade.

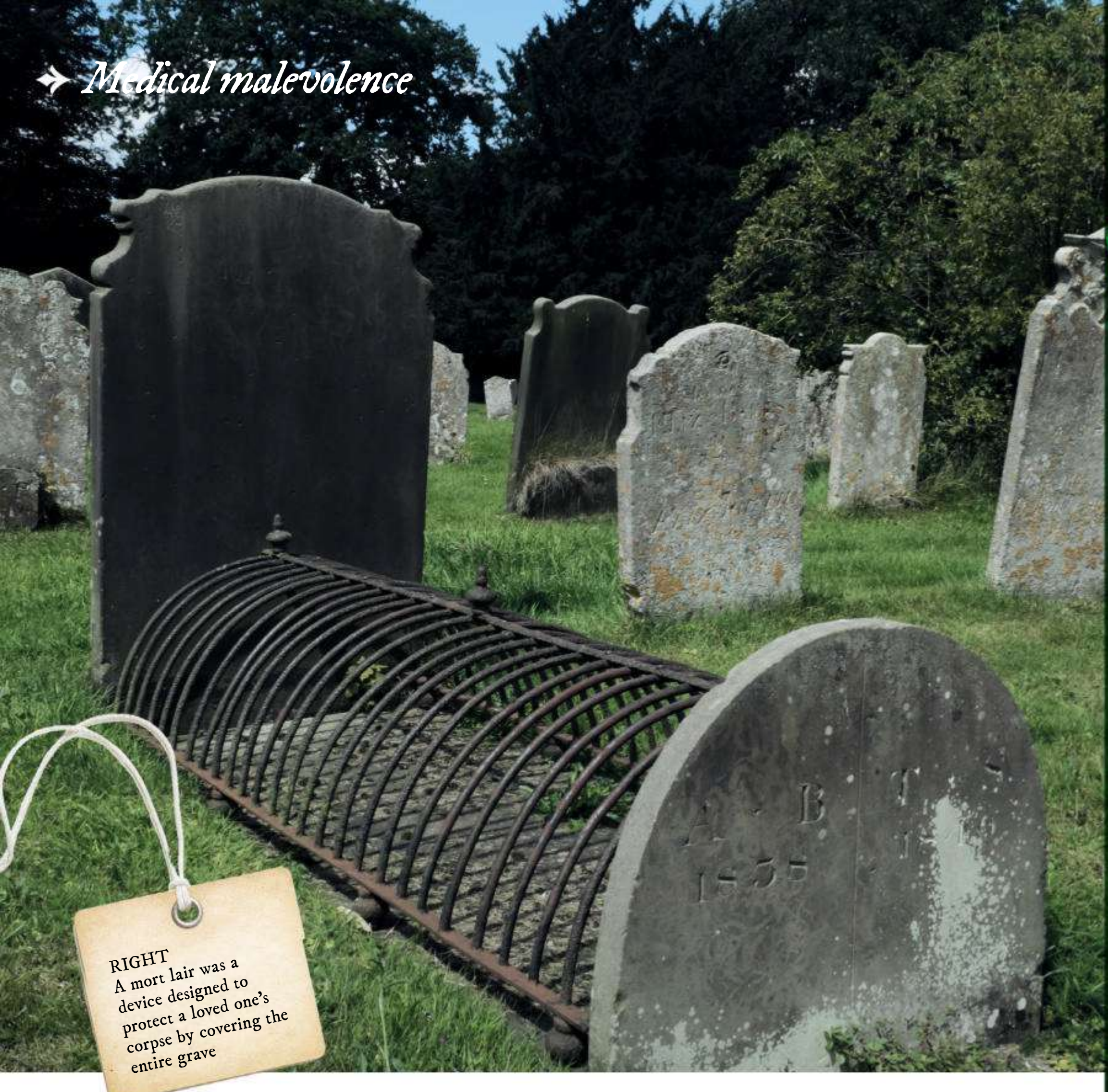
What Impact did the William Burke and William Hare scandal have on the school?
It actually had a positive one. The scandal led to the Anatomy Act of 1832 which made greater numbers of cadavers legally available to schools. If you died in an asylum or hospital, and had no relatives or means to cover your funeral costs, your body would go to the schools for dissection. Crucially, the institutions which were providing the cadavers only supplied them to anatomy schools that were associated with teaching hospitals. So for the Medical School, the impact was that the Act got passed and the school regained its prominence at the expense of other extramural schools.

How does the museum approach this legacy of body-snatching?
One of the first things to note is the idea of consent. If you look around the museum, there are specimens, full skeletons as well as body parts, which are used in teaching. But the individuals who these belong to didn't give full consent. Before 1832 we have very little documentary evidence but it's likely they either would have belonged to people who would have been grave-robbed, or people who were dissected as punishment under the terms of the Murder Act after committing murder. After 1832 it's poor people, again most likely without their individual consent, although this time taken legally under the terms of the Anatomy Act. The museum is aware that for a lot of the collection historically there's no consent given and that the history of the medical school is completely different to the current way that you could possibly donate your body.

What items do you have relating to body-snatching history?
We've got life masks of both William Burke and Hare and death masks of Burke and Dr Knox. The reason we have the Burke mask is that Edinburgh was at that time a centre for phrenology, a strange pseudoscience where they thought they could work out if somebody was prone to committing crime by studying the lumps and bumps on their head. We've also got a couple of Knox's medical specimens used in teaching and, most disturbingly, we've got a letter that's said to be written in Burke's blood which was apparently taken from his head during the dissection. We think that this was written by Alexander Monro Tertius, who was the professor of anatomy who dissected Burke.

Famously, you have the skeleton of William Burke on display. Can you tell us about that?
Following his execution Burke's body was handed over to Professor Alexander Monroe for dissection. The sheriff of the trial, David Boyle, had said to Burke: "Your body should be publicly dissected and anatomised and I trust that if it is ever customary to preserve skeletons, yours will be preserved in order that posterity be keeping remembrance of your atrocious crimes." So after a public dissection, where thousands of people came to see Burke's body, the skeleton was basically quartered, put into barrels and displayed in the museum – where it remains to this day.

2x © Anatomical Museum, University of Edinburgh



RIGHT
A mort lair was a device designed to protect a loved one's corpse by covering the entire grave

constabulary stopped them.

As body-snatching became increasingly prominent, protective measures were introduced to safeguard the dearly departed. One of the most common was a device called the 'mortsafe'. "They were mainly used in Scotland from around 1816 and had been adapted from the more rudimentary mortstone, essentially a coffin-shaped lump of rock placed over the grave at the time of burial," says Lennox. "Once it was realised that body-snatchers could access the corpse via the sides, iron skirts were introduced to the mortstone and the mortsafe began to take shape."

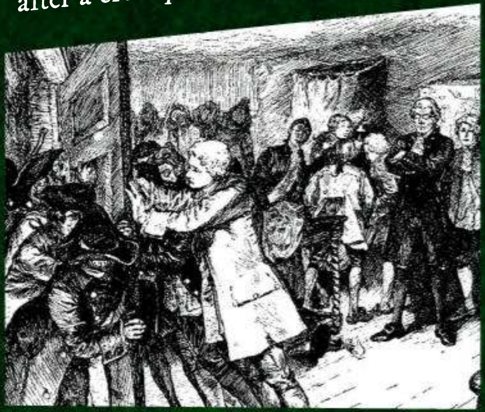
Yet these were not the only options for concerned mourners, there were other, more inventive forms of protection too. 'Coffin collars' were metal hoops latched around the neck of the corpse and bolted to the bottom of the casket. Or families could rent a space for their loved one in a 'morthouse', essentially a large stone storage shed that would be guarded. The body would remain here until it had rotted past the point of use for anatomists and would then be interred in the grave. Adverts could also be seen for metal coffins, such as "the only safe coffin is Bridgman's patent wrought-iron one," but easily the most outlandish of these protective measures was the 'grave gun'. This was essentially a gun (usually a poacher's rifle) rigged with a tripwire and positioned over a grave. In the United States such measures were taken to the extreme with the creation of the 'coffin torpedo'. This explosive device, invented by Phillip K Clover of Columbus, Ohio, was attached to the roof of the coffin and was designed to fire several lead balls into any would-be grave robber when it was struck with a spade.

It was between 1827 and 1828 in Edinburgh that perhaps the most infamous resurrection men operated, despite never actually stealing a body. The men in question? William Burke and William Hare. Their introduction to the world of the resurrectionists happened by accident when one of Hare's lodgers, known as 'Old Donald', died of natural causes but, crucially, without paying his rent. Seeking a way to recover the money he had owed them, Burke and Hare took his corpse to the medical school of the eminent Dr Robert Knox. Knox was so delighted with the body's fresh condition that he paid them the princely some of seven shillings. Realising that

> "Dr Robert Knox was so delighted with the body's fresh condition that he paid Burke and Hare the princely sum of seven shillings"

WHY YOU SHOULDN'T WAVE DISEMBODIED ARMS AT YOUNG BOYS

In 1788 the citizens of New York turned against the medical establishment that for years had been pillaging its graves, after a cruel prank by a young student



Body-snatching wasn't just a British phenomenon and during the 18th and 19th centuries was just as common in the United States, where strict laws likewise caused a boom in demand from eager medical students for 'specimens'.

One day in New York in April of 1788, a group of young boys playing in the street happened to glance through a window and were aghast to see a medical student eagerly dissecting a corpse. Annoyed at being interrupted, the student waved a disembodied arm and remarked that it belonged to one of the boy's mothers. The problem was, the boy's mother had recently died and when his furious father discovered her grave to be empty, an angry mob descended on the hospital.

Seeing the outraged mob, most of the doctors and students fled but some stayed behind in an attempt to safeguard their valuable specimens, but to no avail. The crowd found a handful of undisturbed corpses and took them to the cemetery for proper burial.

Meanwhile, doctors and students were escorted to jail for their own protection, but the mob could not be tamed and hunted for any anatomist still at large in the city. They descended on Columbia School, ignoring pleas for peace from a desperate Alexander Hamilton. The students barricaded themselves inside and it was only when a group of militiamen opened fire that the crowd subsided.

This was just one of many riots that occurred due to the actions of the anatomists. For weeks on end following the events, groups of vigilantes patrolled the cemeteries at night, determined to protect the remains of their loved ones.

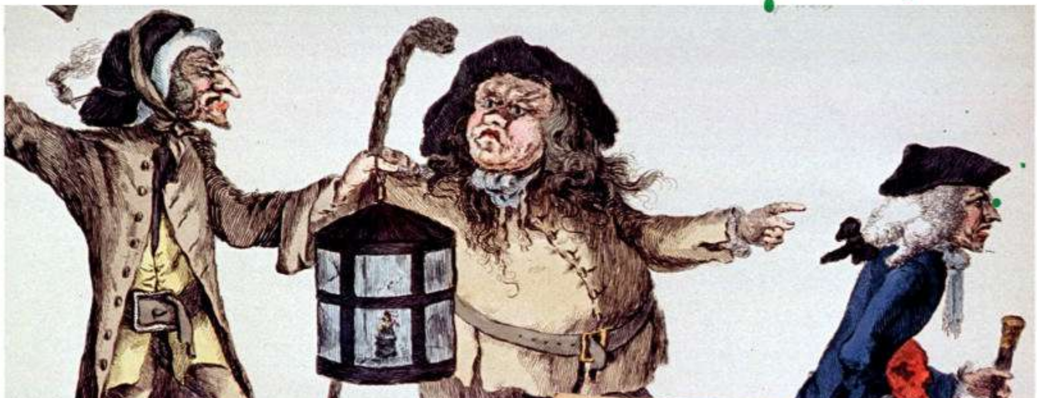
'freshness' was key, the pair began luring poor and vulnerable individuals to the lodging house and smothering them to death. The bodies were then taken to Knox who, due to a bad case of smallpox as a child, had only one good eye and seems to have shut this in regards to where his two suppliers obtained his specimens.

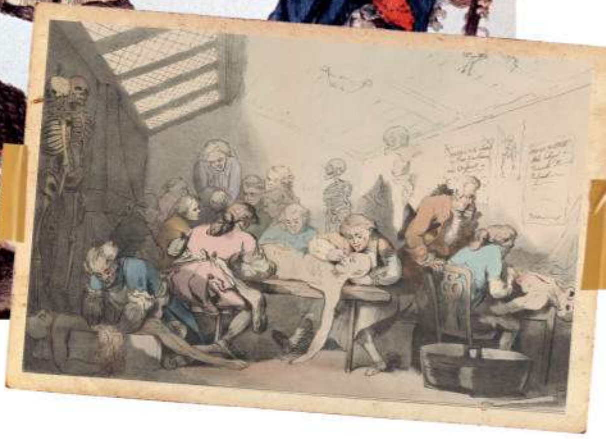
Eventually the pair were apprehended when they killed Marjory Docherty, a distant relation of both Burke and James and Ann Gray, a couple lodging at the house. After Docherty vanished one evening the Grays became suspicious and found her body hidden in a spare room. They went straight to the police, by which time Burke and Hare had moved the body to Knox's school. A search uncovered the body and Burke and Hare were arrested. Hare, in return for immunity, testified against Burke, who was hanged on the morning of 28 January 1829. In a final irony Burke's body, being that of a criminal, was sent for dissection. Knox escaped trial but failed to salvage a career that had been left in tatters.

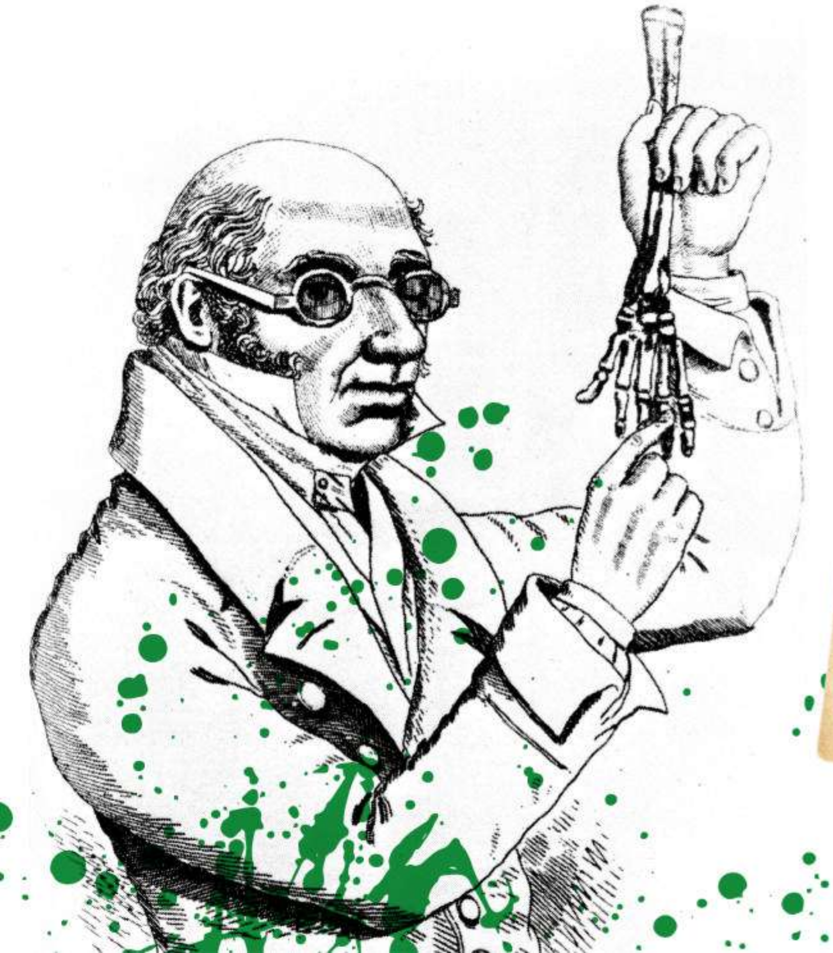
Yet these infamous crimes were not the only murder scandal connected to the world of the resurrectionists. 'The London Burkers', perhaps more so than Burke himself, were arguably the driving force behind the Anatomy Act of 1832. Composed of John Bishop, Thomas Williams and the aforementioned James May, this trio did actually rob a few graves. However, they seemed to have been inspired by the events in Edinburgh and turned to murder, their crimes discovered in 1831 when they delivered the corpse of a 15-year-old boy of Italian origin to King's College School of Anatomy. The staff, becoming suspicious, reported the incident to the London Constabulary. During the trio's confessions, Bishop stated that they had murdered another boy and also a girl, which was corroborated by Williams. Describing the murder of the so-called 'Italian Boy', Carlo Ferrari, Bishop stated that the victim was actually from Lincolnshire and had been lured to their house with the promise of work. The duo proceeded to give the boy a cup of rum laced with laudanum, Bishop stating that: "I then took him in my arms and let him slide from them headlong into the well in the garden while Williams held the cord to prevent his body going altogether too low into the well - he was nearly wholly in the water of the well." Bishop and Williams were sentenced to execution, but May was granted a reprieve. "In his confession, John Bishop would admit to snatching over 1,000 corpses from London's graveyards," Lennox reveals. "He believed that nearly every resurrection man in London had attempted 'Burking' after hearing about the idea from the man in Edinburgh who gave the practice its name - William Burke."

It was following these events that the 1832 Anatomy Act was introduced in an attempt to regulate the supply of bodies to anatomy schools. But how successful it was is debatable. Historian John Knott, in his 1985 paper *Popular Attitudes to Death and Dissection in Early Nineteenth Century Britain*, says, "the Anatomy Act did not solve the problem of obtaining cadavers for medical students," and argues that while the Act may have curtailed the rampant proliferation of body-snatching, it meant that eager medical students obtained their 'materials' from poorhouses and hospitals instead. These were largely the bodies of the working classes.

However, despite the debatable success and morality of the Anatomy Act, the following decades saw body-snatching gradually decrease. Meanwhile authors such as Robert Louis Stevenson, with his 1884 short story *The Body Snatcher*, ensured that the resurrectionists would have an afterlife of their own as the subject of gothic and gruesome horror stories. The dark and sinister figure, stalking the graveyards with his trusty shovel in search of fresh bodies, became an icon of terror in its own right.







ABOVE
A 1773 caricature showing the renowned anatomist Dr William Hunter caught in the act of stealing a corpse

ABOVE RIGHT
An 18th century illustration of a dissecting room

LEFT
Doctor Robert Knox, who purchased the corpses of murder victims from William Burke and William Hare

Main font & background: © Getty Images
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Inhumane MENTAL HEALTH treatments

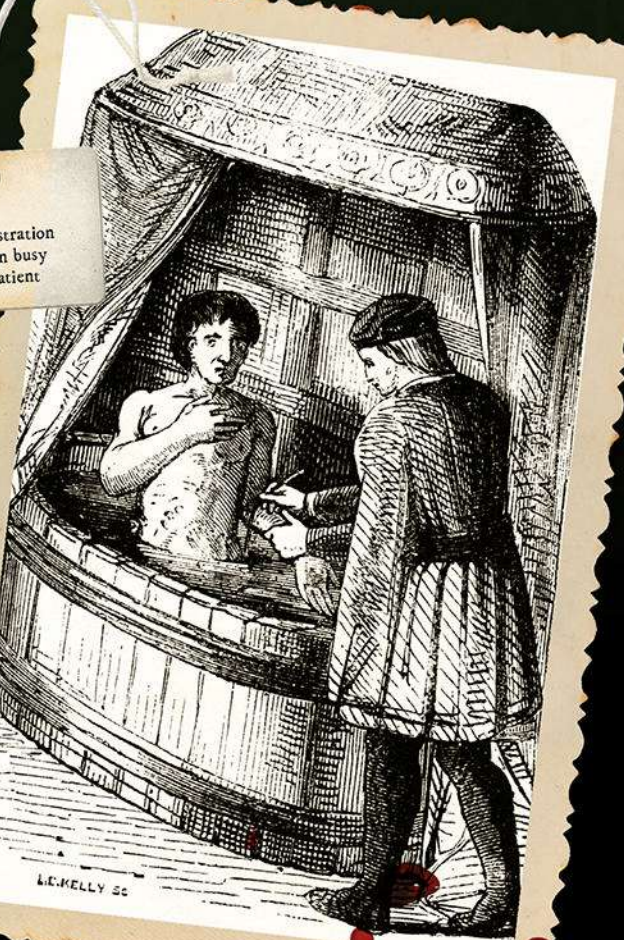
Throughout history, people have tried to find ways to treat mental illness, but many of these ended up closer to torture than medicine

Written by Mark Dolan

Mental health has been a concern for societies throughout human history, with no apparent cause and no obvious cures. Many methods have been tried for curing conditions such as manic depression, psychosis and schizophrenia, but the extreme measures of them make for horrifying reading.

BLOODLETTING

Bloodletting is perhaps the pinnacle of historical quackery, used widely and almost always ineffectively. One of its most ineffective but persistent uses was in the treatment of mental illness. The four humours - blood, phlegm, yellow bile and black bile - were for centuries after Hippocrates (c 460-370 BCE) considered the origin of all ills. By the 1st century CE, bloodletting was a common treatment for many conditions, but when the respected physician Galen declared blood the most dominant of the humours, bloodletting became even more prevalent. As late as the 17th century, bloodletting was being touted as an excellent cure for mental health problems, which, according to French physician Jacques Ferrand, included heartbreak. In the 18th century, mental health asylums, including the famous St Mary of Bethlehem (aka Bedlam), were regularly employing bloodletting as a valid treatment for mental illnesses. Across the Atlantic, too, bloodletting's miraculous healing qualities were being touted, with the physician and Founding Father Benjamin Rush, sometimes known as the American Hippocrates, singing its praises as a "heroic depletion therapy".



RIGHT
An 1858 illustration of a physician busy bleeding a patient

TREPANNING

Trepanation, or boring a hole in the skull, is likely the oldest form of surgery, with the earliest evidence for the procedure dating to c 6000 BCE. However, it did not go the way of stone tools, rather continuing to be practiced, albeit differently, all the way into the 19th century.

The earliest known application of trepanning as a cure for mental illness comes from Aretaeus the Cappadocian in around 150 CE, while the 13th century surgical text *Quattor magistri* recommended the procedure as a cure for epilepsy, a condition often lumped in with mental health issues. At this point in time, all conditions were thought to be caused by an imbalance of the four humours and trepanning enabled "the humours and air [to] go out and evaporate".

Of course, without modern understanding of the importance of hygiene, trepanning would often end up being fatal for the patient. Even in 1655 it was seen as an extreme treatment and a last resort, as noted in Lazarus Riverius's publication, *The Practice of Physick*.

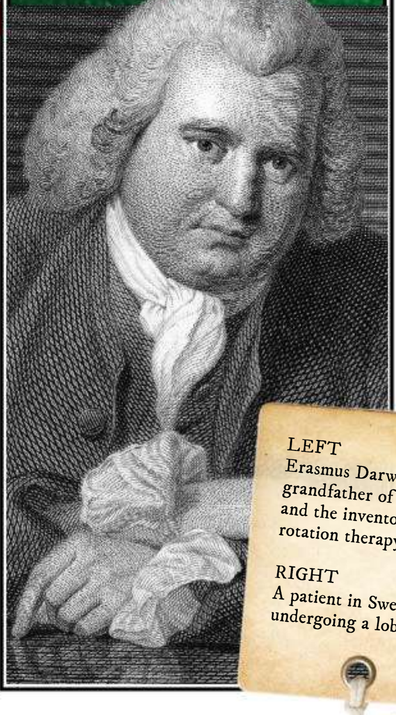
"Trepanation, or boring a hole in the skull, is likely the oldest form of surgery"

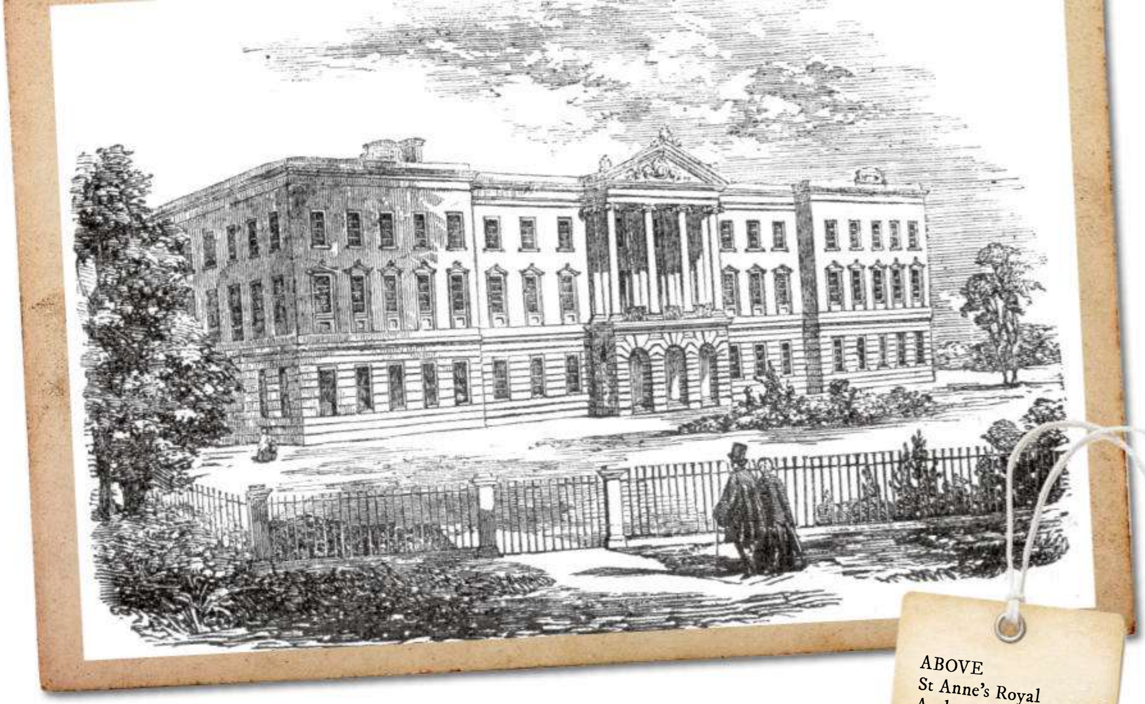
© Getty; Alamy

ROTATION THERAPY

One of the most notorious mental health treatments that was utilised in the asylums of the 19th century had surprisingly illustrious beginnings. In the late 18th century, Erasmus Darwin, grandfather of the better-known Charles, developed rotational therapy, a practice in which people would be strapped to a chair suspended in the air by ropes, which was then spun 20-40 times and allowed to spin back to equilibrium. The rotation would induce vomiting, diarrhoea and urination, which was considered an effective way of ridding the body of harmful substances. In addition, it was believed to have a positive effect on the brain, lulling the patient into a restful sleep akin to rocking a baby.

It was also thought that the fear patients would develop of the spinning was beneficial in the treatment of mental illness, leading people to be more compliant with their doctors' demands and, probably, willing to mask their symptoms in order to avoid further sessions in the chair.





ABOVE
St Anne's Royal Asylum, 1857

MENTAL ASYLUMS

The emergence of mental asylums in the 19th century transformed the way people in the UK thought about mental illness. Prior to their arrival, upper-class people were provided with care and support by family and friends, but the idea that these were places where people could be permanently 'cured' was a very attractive one. As for the unlucky lower classes who suffered from mental health, they were criminalised and often wound up in prisons and workhouses.

Asylums were set up as safe places for people to go for specialist treatment and care. The conditions inside these 'havens', though, did not match the lofty ideals. In many asylums, a dormitory could have up to 50 people sleeping in close proximity. Patients lived in cramped, unhygienic conditions and were regularly subjected to a range of 'treatments' that were akin to torture. As asylums proliferated, the number of people being certified as insane skyrocketed, and the number of patients discharged fell. By the end of the 19th century, there was little pretension that people went to asylums to be cured, and they essentially became prisons for society's unwanted.

LOBOTOMY

In November 1935 in Lisbon, the Portuguese neurologist António Egas Moniz performed his new surgery for the first time. Believing that mental disorders such as depression and psychosis were caused by a physical malfunction in the brain, specifically in the frontal lobe, Moniz decided to attempt treatment by drilling into a patient's skull and injecting pure alcohol into the frontal lobe to destroy the nerves and tissue. Moniz called his procedure a 'leucotomy' and reported miraculous results, proclaiming the patient cured of her depression, though in reality she was never discharged from the mental hospital where the procedure was undertaken.

The next year, in 1936, Moniz's work was picked up by the American neurologist Walter Jackson Freeman II, who tweaked the surgery, replacing the use of ethanol with the surgical removal of the lobe itself. From this point, word spread of the incredible effects of the treatment, and according to a 2013 paper, around 50,000 lobotomies were performed over the following 20 years in the US alone. By the 1950s, the dangers and side effects of lobotomies were becoming more well-known. A number of high-profile cases, including the permanent incapacitation of John F Kennedy's sister, Rosemary, after a lobotomy by none other than Walter Freeman himself, began to turn public opinion against it. In 1967, Freeman was banned from performing any more lobotomies after one of his patients suffered a fatal brain haemorrhage following the procedure.

LEFT
Erasmus Darwin, grandfather of Charles and the inventor of rotation therapy

RIGHT
A patient in Sweden undergoing a lobotomy

© Getty, Alamy

Exorcism

In the Bible, there are various instances where Jesus is said to have cured people of their ailments by casting out the demons that were possessing them, and in the Middle Ages, symptoms of mental health conditions were often ascribed to demonic or supernatural possession. The sensible option was therefore an exorcism, a rite intended to expel the demon from the person and cure their symptoms. The practice of exorcism itself was not overtly inhumane, but its effectiveness was generally low, and when it had failed, the second option was often worse. If after exorcism had been attempted, the sufferers continued to show the same symptoms, they may have been exiled or even killed.

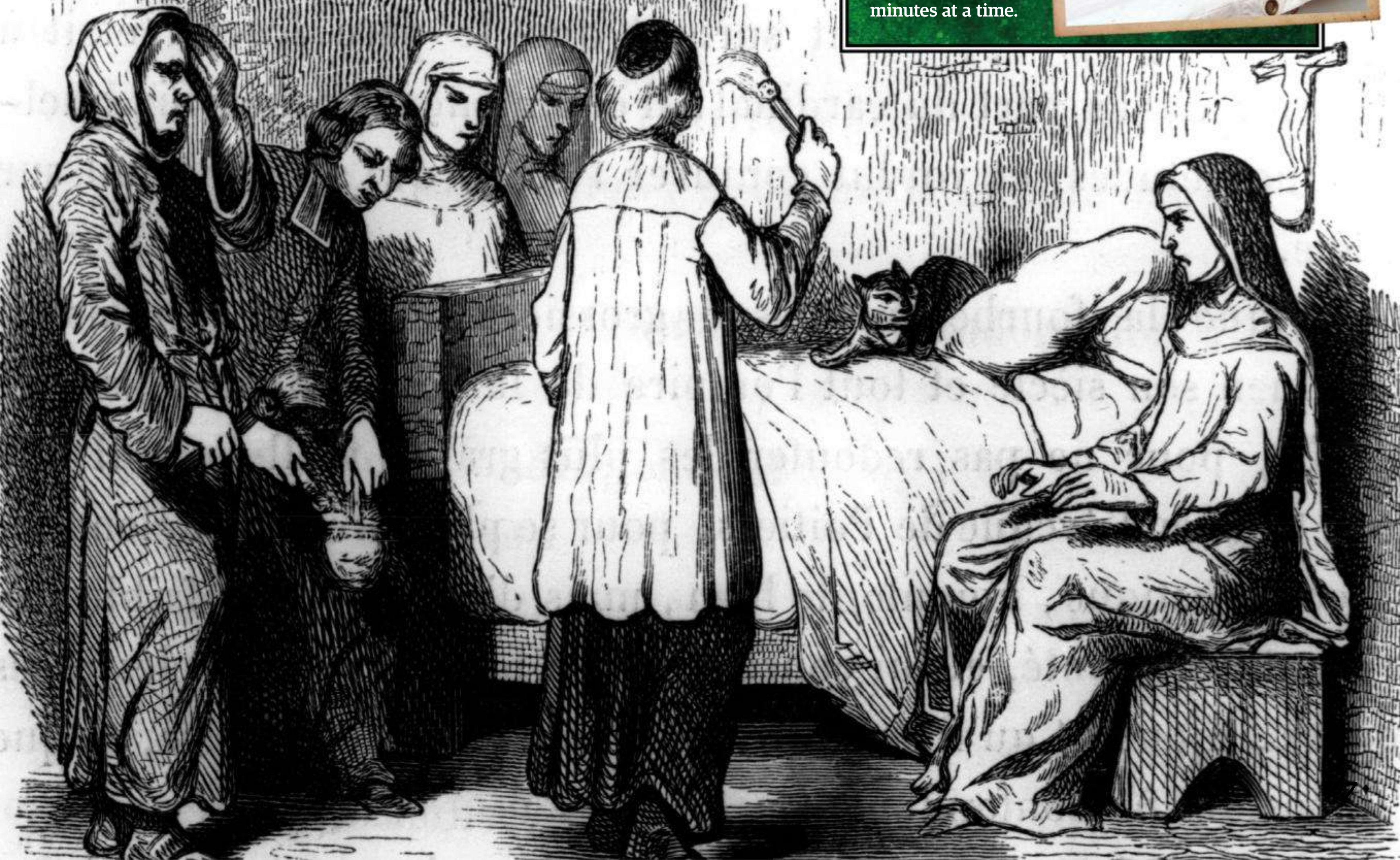
> "Symptoms of mental health conditions were often ascribed to demonic or supernatural possession"

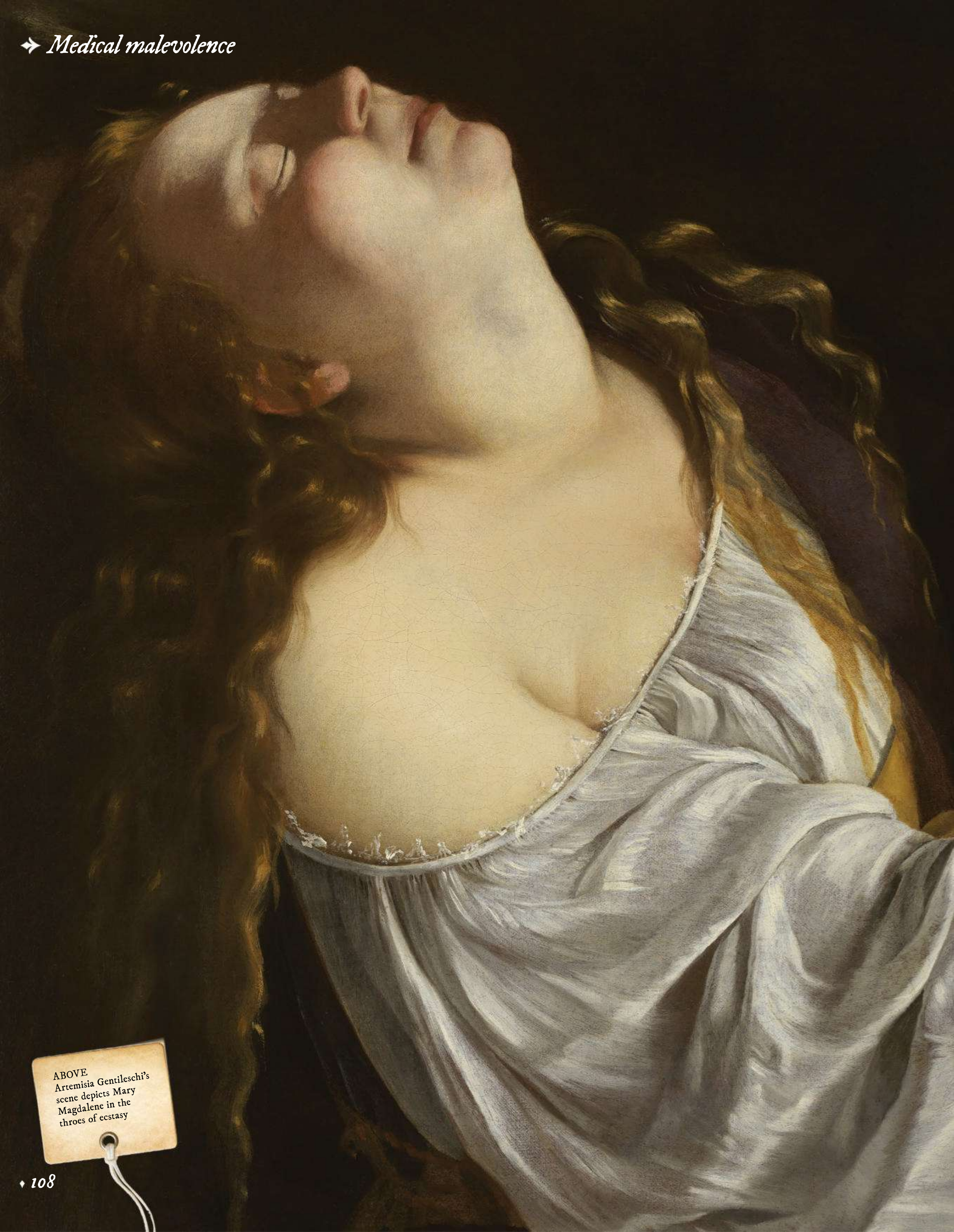
The Bath of Surprise

In addition to the rotating chair, 19th-century doctors developed a further method for inducing similar results in their patients: the 'bain de surprise', or bath of surprise. This treatment involved immersing people in ice-cold water without warning. The shock was considered to be a key part of the method, and the combination of the shock and the temperature had the desired effect of inducing vomiting and heartburn, both symptoms of supposedly successful cures. In addition, these ice baths helped the doctors dampen their patients' sex drives and increase compliance, again, likely often out of fear, which they could happily tout as evidence of the reduced symptoms of their mental illnesses. The apparent success of the bath of surprise led to the wider development of hydrotherapies, which included practices such as keeping people in continuous baths for several hours or even days, tightly wrapping patients in wet cloth and leaving them for a few hours, or having people stand in stalls and spraying them with hot or cold water for minutes at a time.

BELOW
An exorcism being carried out in a French convent in 1632

RIGHT
A modern replica of an asylum hydrotherapy bath



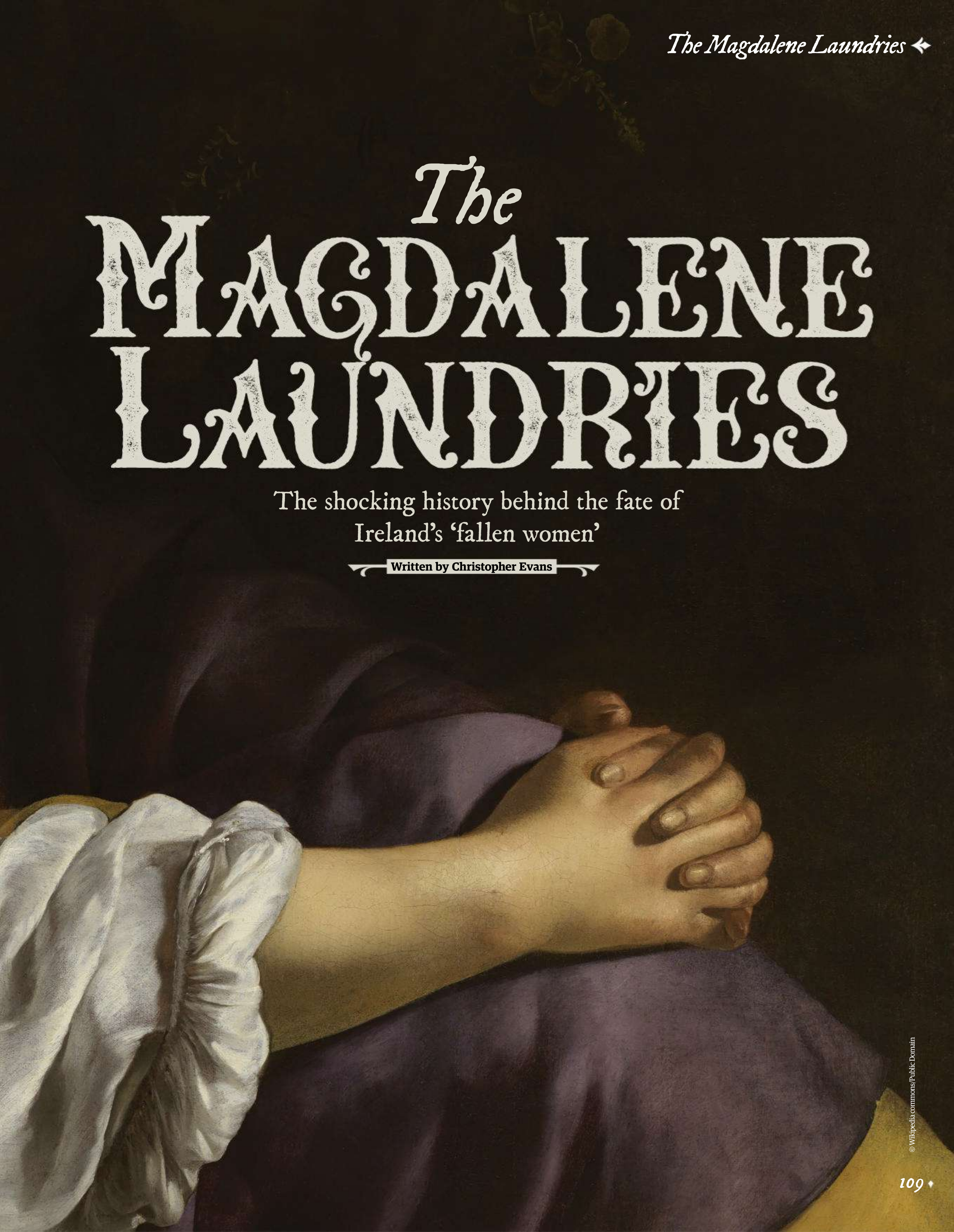


ABOVE
Artemisia Gentileschi's scene depicts Mary Magdalene in the throes of ecstasy

The MAGDALENE LAUNDRIES

The shocking history behind the fate of Ireland's 'fallen women'

Written by Christopher Evans



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In 1993, having lost money in bad investments, the Sisters of Our Lady of Charity were forced to sell some land. This included a cemetery for one of their convents, so the nuns applied to have the bodies exhumed and moved. However, what was found was a mass grave of unmarked women. There were over 20 more bodies than expected, and the nuns could not produce death certificates for more than half of them. These were the remains of the 'fallen women' of Ireland's Magdalene Laundries. Women deemed unfit for society and taken into workhouses to live lives of horror and abuse, before being dumped into the ground, their names, and lives, forgotten. This discovery would shine a painful light on these institutions, its 10,000 victims, and a disturbing period of Ireland's history that had been operating for 200 years.

In the 18th century both Catholic and Protestant churches started to send 'fallen women' to workhouses for short periods of time as a way of rehabilitation. Their 'crimes' were anything that had made them outcasts to a religious society. Many were unwed mothers, their daughters, 'promiscuous' women or women who had taken to sex work to survive. Even victims of sexual abuse found themselves inside this harrowing system, made up of a vast network of convents, orphanages, asylums, and mother and baby homes. One survivor was sent to a Laundry after being raped as a precaution in case she fell pregnant.

Named after the biblical 'fallen woman', Mary Magdalene, the Catholic-run Laundries in Ireland would continue on even after the creation of the Irish Free State in 1922. Although not regulated by the State, they were quietly funded by them and girls would often be sent there by the judicial system for punishment. Women could be transferred to the laundries at the request of social workers, the Gardaí, local councils, and members of the Church.

TOP
The derelict interior of the Sisters of Our Lady of Charity, whose sale of land revealed the shocking history

ABOVE
Conditions at the Laundries were more akin to a prison than somewhere that offered help to those in need

LEFT
Bars guard the window of a former Magdalene Laundry in Dublin

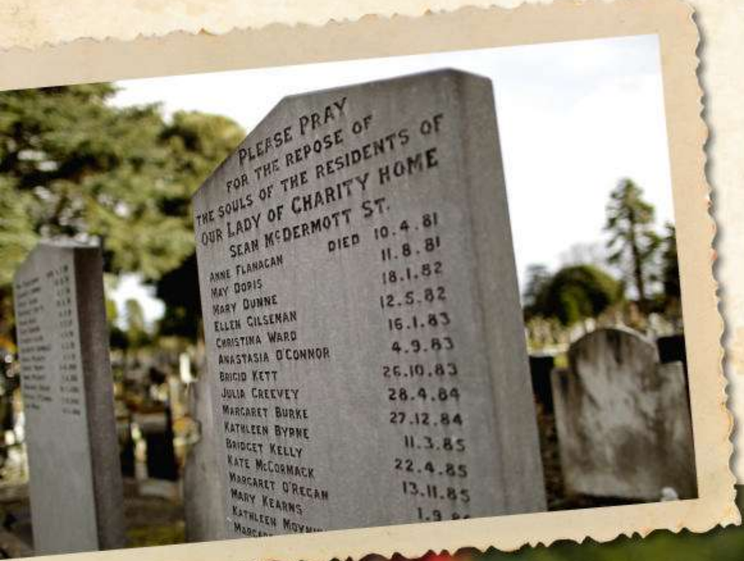
Once inside, women would be at the mercy of the nuns. While originally envisioned as a place for women to learn new skills and support themselves on release, the Laundries quickly became harsher and more like prisons. Set sentences were rarely adhered to, and the women sent there would often be kept for years, cut off from families and society itself, right up to their deaths. On arrival women would be given a new name, have their hair cut, and their belongings taken away. Silence was to be observed at all times, except for praying, to discourage the women getting to know each other and forming friendships.

The main bulk of the work was cleaning and packing laundry, which came from local businesses, hospitals, prisons, and even government offices. The hours were long, often from early morning to late at night, and there was no pay – the women did not see a single penny of the profit from their labour. Punishments were doled out for insolence, mistakes, or for working too slow. Women would be beaten, refused food, forced to kneel for hours or sleep out in the cold. Education or medical assistance was non-existent and many of the women became institutionalised, finding themselves dependent on the Laundries and unable to return to life outside. If they were released, it was with no support, and many would return to work at another Laundry.

Some of the unwed mothers who ended up in the Laundries, often to shield their families from scandal, would face even further horrors. Their illegitimate babies would be removed after birth and given to other families.

As a result, Ireland became a prime target for a baby black market, due to the lack of records and paperwork, and many of the adoptions were illegal. Babies were bought by rich Catholics from the United States and whisked away, their mothers would never see them again.

The last Magdalene Laundry did not close its doors until 1996. The scandal of the mass grave shook Ireland to its core, and led to the Irish government issuing an apology to the women in 2013.


PLEASE PRAY
FOR THE REPOSE OF
THE SOULS OF THE RESIDENTS OF
OUR LADY OF CHARITY HOME
SEAN McDERMOTT ST.
DIED
ANNE FLANAGAN 10.4.81
MAY DORIS 11.8.81
MARY DUNNE 18.1.82
ELLEN GILSEMAN 12.5.82
CHRISTINA WARD 16.1.83
ANASTASIA O'CONNOR 4.9.83
BRIGID KETT 26.10.83
JULIA CREEVEY 28.4.84
MARGARET BURKE 27.12.84
KATHLEEN BYRNE 11.3.85
BRIDGET KELLY 22.4.85
KATE McCORMACK 13.11.85
MARGARET O'REGAN
MARY KEARNS
KATHLEEN MOYMIN

RIP
7th June 1982
MARGARET MARY LENZI
MARTHA MARY LENZI
RIP

LEFT
This burial plot is for victims of one of the Magdalene Laundries – too many who died were unknown

BELOW
Simple crosses mark the graves of babies lost from 'Mother and Baby' homes

Images © Getty; Alamy

JACK the RIPPER

History's most infamous serial killer stalks the streets and the police hunt for him grows more desperate with every gruesome murder

Written by Robin Brown

August 31st 1888. The East End of London is not unaccustomed to violence or murders, but on Buck's Row lies a body that has been mutilated beyond even Whitechapel's reputation for depravity. Her throat cut and abdomen gashed, Mary Ann Nichols, known as Polly, has become the first unwitting victim of the modern era's most notorious serial killer.

Polly Nichols is widely considered the Ripper's first victim and shares a similar profile to most of his later victims. Estranged from her family, Nichols has worked the dark streets of Whitechapel for most of the decade. Known for her love of drink and with a turbulent personal history behind her, Polly has been in and out of London's workhouses, where the destitute are offered food and shelter in return for unskilled work, for over five years, ever since her husband ceased maintenance payments on the grounds that his wife has been working as a prostitute.

Despite finding a job working as a domestic servant during the spring of 1888, Nichols resumes her itinerant lifestyle and lives in a series of workhouses and lodging houses over the summer. On 31 August 1888, Polly has made her daily lodgings money three times over but has drunk away most of her profits, so she must go out to work again if she is to have a roof over her head for the night. She is last seen in The Frying Pan public house before heading out into the night again – minutes later her body is discovered on Buck's Row. Her throat has been cut and her abdomen slashed open. It will later be discovered in the mortuary that Polly Nichols' body has been eviscerated too.

Even before the Ripper's reign of terror, the East End was a hotbed of violence, particularly toward women. While the police will later exclude them from the so-called canonical murders – the five murders considered to have been perpetrated by the Ripper – two women working as prostitutes have already been killed in 1888. Emma Smith and Martha Tabram were both killed and mutilated that year, but with such events relatively commonplace there is little concern among the capital's police force. This will soon change.

A burly, mustachioed man, Frederick Abberline knows the streets of Whitechapel well, having worked in the Metropolitan Police force's H Division as a local inspector for almost ten years before receiving a promotion to inspector first-class at Scotland Yard in February 1888. With the resources of H Division seen as stretched and the seriousness of the Nichols murder recognised at the highest levels, Abberline is seconded back to Whitechapel to oversee the investigation into the murders due to his excellent knowledge of the area's geography, criminals and way of life. Nobody doubts Abberline's suitability for the job – he is considered fair and meticulous. With increasing

“Polly has made her daily lodgings money three times over but has drunk away most of the profits”

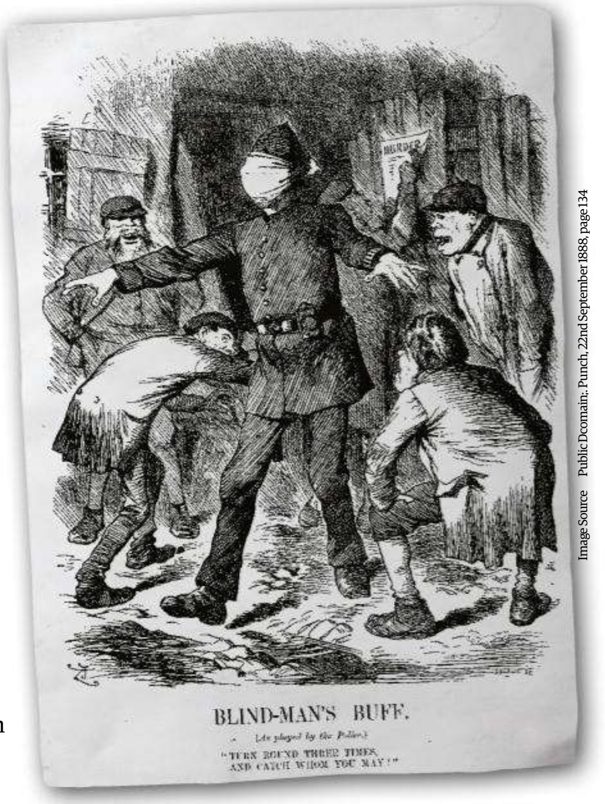

MURDER
BLIND-MAN'S BUFF.
(As played by the Police.)
"TURN ROUND THREE TIMES,
AND CATCH WHOM YOU MAY!"

Image Source Public Dcomain;. Punch, 22nd September 1888, page 134

numbers of detectives and divisions involved in investigating the murders, Abberline becomes the most-recognised policeman connected to the Ripper murders, conducting interviews, viewing identity parades and hearing testimonies first-hand. Many high-ranking officials from Scotland Yard would compile their own theories based on Abberline's reports.

However, the police have a difficult task on their hands. The victims' profession is an unwitting assistance to the Ripper. They lead him to the shadows, where they are unlikely to be disturbed: the perfect way to commit murder in Whitechapel. With an estimated 90,000 people crammed into little more than 2.6 square kilometres (1.5 square miles) – and an estimated 1,200 women working as prostitutes at any one time – policing Whitechapel is near-impossible. This is made even harder by Victorian methods of policing, which dictate that beat constables must check in on their rounds on time or face their pay being docked: a quixotic rule that leads to some constables turning a blind eye to crime in order to check in on time. By 19 September, Abberline is forced to conclude that, "not the slightest clue can at present be obtained", as to Nichols' killer.

Just a week after the murder of Nichols, the Ripper strikes again. On 8 September 1888, the body of Annie Chapman is discovered in the yard of 29 Hanbury Street. Her throat has been cut, but the mutilations are even more horrific. Chapman's body has been disembowelled and the intestines strung over her shoulder; part of Chapman's womb has been removed. Alongside Chapman's meagre possessions there is a leather apron found nearby.

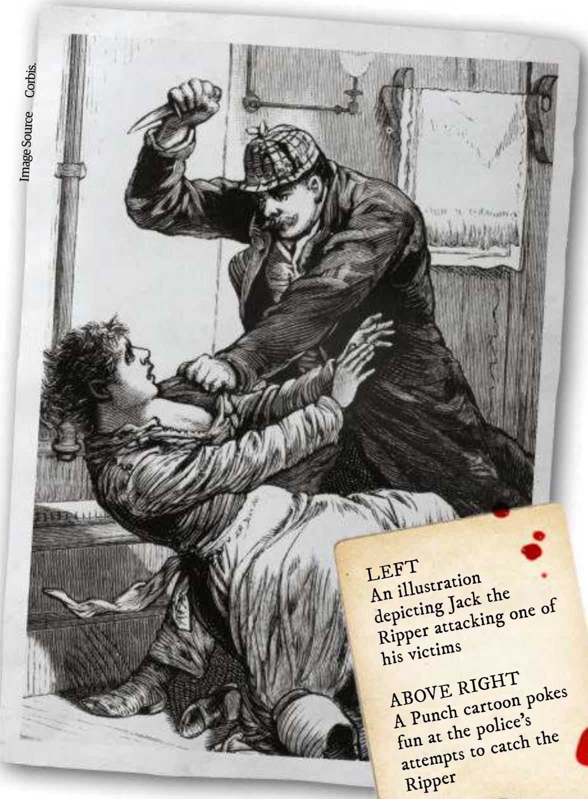


Image Source Corbis.

LEFT
An illustration depicting Jack the Ripper attacking one of his victims

ABOVE RIGHT
A Punch cartoon pokes fun at the police's attempts to catch the Ripper

Newspapers quickly latch on to the two murders and the leather apron is seen as vital evidence by the press. A man colloquially known as 'Leather Apron,' John Pizer, is reported to have been seen with Chapman shortly before her murder. Pizer had previously attacked a man with a knife and sexually assaulted a prostitute the previous summer, which doesn't help his cause. Just as importantly – given the rampant suspicion of Jews in the East End – Pizer is Jewish, spurring the press on to hysterical anti-Semitism. The East London Observer describes Pizer as having a face "not altogether pleasant to look upon, by reason of the grizzly black strips of hair" and possessing "thin lips" with "a cruel sardonic kind of look". However, Pizer is quickly discounted as a suspect when it is discovered he has an alibi for both murders.

Over the course of the investigation, more than 2,000 people are interviewed in connection to the murders, with a focus on slaughtermen, butchers and those in the medical profession, due to the initial belief that the murderer must have some anatomical knowledge. With thousands of accusations every week, Abberline and H Division is stretched to breaking point. Public dissatisfaction with the investigation leads to the formation of a vigilante group, The Whitechapel Vigilance Committee. Frustrated with the police's performance, the committee starts its own patrols, paying men a small wage to patrol the streets from midnight to the early hours of the morning.

Without some of the most basic forensic science that crime-fighters will take for granted in the 20th century Abberline struggles to make any headway. The policeman would walk the streets until the early hours searching for clues and would often give unfortunates fourpence for a night's doss to get them off the streets. At one point H Division has 1,600 reports to wade through and the strain on Abberline nearly breaks him.

The police are deluged with letters – most of them overwhelmingly certain fakes – and information they do not trust. However, physical profiles built from claimed witness reports, in contradiction to the romanticised image of the Ripper, suggest a white man in his twenties or thirties with a moustache and dressed shabbily or as a tradesman or sailor. A criminal profile by police surgeon Dr Thomas Bond suggests a quiet, eccentric man without anatomical knowledge and driven by sexual mania to kill: "The murderer must have been a man of physical strength and of great coolness and daring. There is no evidence that he had an accomplice. He must in my opinion be a man subject to periodical attacks of homicidal and erotic mania. The character of the mutilations indicate that the man may be in a condition sexually, that may be called satyriasis."

Victorians make much of sexual dysfunction and many who end up in lunatic asylums are committed there for activities that would not raise an eyebrow today. Nevertheless, while Ripper victims show no signs of sexual assault, most believe that there is a sexual element to the murders, given the way the corpses are posed and the genital mutilations that most display. Abberline is suspicious of Jacob Isenschmid and at one point declares him to be the most likely suspect, not a great leap, as he is given to bouts of insanity and is known as the 'Mad Pork Butcher.' He is arrested on 12 September and subsequently committed to the Bow, an infirmary asylum. Several weeks pass following Chapman's death and the hysteria following her death begins to die down. The East End allows itself to hope that the worst has passed before it is struck with a horrific double killing in the early hours of 30 September.

Like Nichols and Chapman, Liz Stride has worked as a prostitute but had previously run a coffee house with her husband, who had died in 1884. At that time, Stride is working as a charlady and making some money sewing, while occasionally receiving money from her on-off partner, Michael Kidney. Days before her murder, Dr Thomas Barnardo claims to have seen Stride in a lodging house in Whitechapel among a group of women who opine that they might soon be murdered by the Ripper.

> "Even before the Ripper's reign of terror, the East End was a hotbed of violence, particularly toward women"

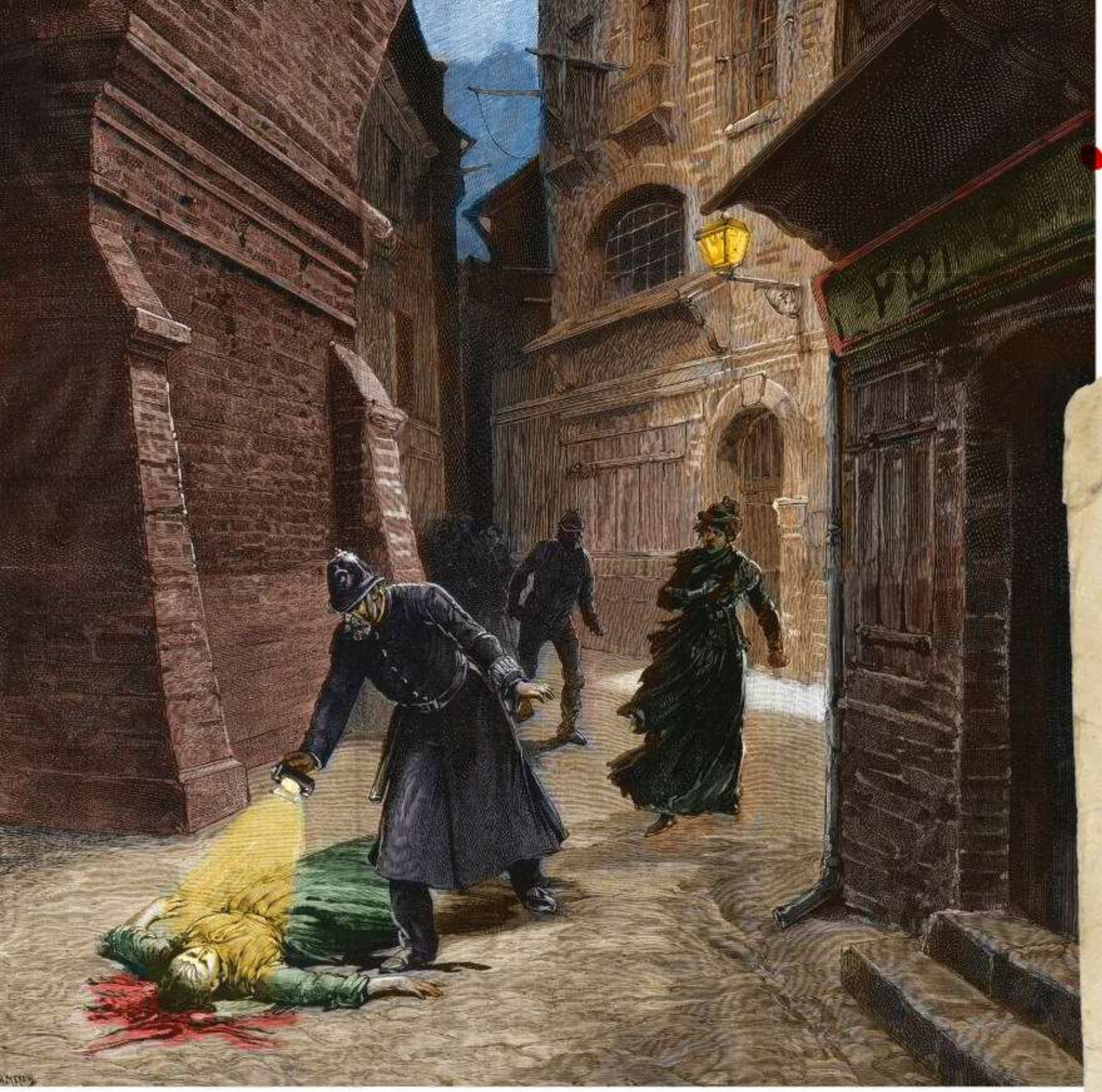


Image Source Above: Corbis

Stride is found with her throat cut in Berner Street on 30 September. Of the canonical five, Stride's murder is considered the most dubious due to the lack of trademark mutilations, leading to speculation that the murderer is interrupted shortly after killing Stride, or even that her murder is committed by someone other than the Ripper, perhaps a would-be copycat. This theory is given further credence when the body of Cathy Eddowes is discovered in Mitre Square 45 minutes later.

The killing of Stride is significant in that it features one of the most convincing eyewitness descriptions, given by a man named Israel Schwartz. His account suggests that he saw the Ripper attack Stride before becoming aware that he was observed, shouting "Lipski!" before Schwartz escapes. The police suggest the colloquial term, used to refer to Jews, is essayed to an accomplice nearby, who makes it towards Schwartz himself. This theory leads the police to initially conclude that their suspects are Jewish.

However, Abberline is of the opinion that the term is aimed in a derogatory manner at Schwartz, given his Yiddish features. Such is Abberline's standing in the investigation that this take is adopted without question, discounting the theory that the Ripper was Jewish and working with Jewish accomplices.

Eddowes is not known to work routinely as a prostitute and is in a relationship at the time of her death. She is given to heavy drinking, however, and on the night of her death is taken to Bishopsgate Police Station and locked in a cell until sober. At around 1am, she is released and turns to walk in the opposite direction to her lodging house – in less than an hour she will be dead. Unlike Stride, Eddowes' body has been horrifically mutilated. Having cut her throat, the killer also disembowels his victim, removing part of her kidneys and uterus. The corpse's eyes have also been removed, as well as the tip of her nose and an earlobe.

The removal of the kidney is significant. Scotland Yard and H Division are deluged with thousands of letters a week from the public, pointing the finger at possible suspects. What's more, the press claim that a number of letters, purporting to be from the Ripper, have been sent to their offices. Of these letters, only one is believed to be potentially genuine. Sent to George Lusk, head of the Whitechapel Vigilance Committee, two weeks later, it contains a piece of kidney that is purportedly from Eddowes' body. The letter is thought to be significant as the kidney is reported to show signs of Bright's Disease, which Eddowes is known to have suffered from. The writer of the letter – marked as being written 'From Hell' – claims to have eaten the missing kidney half and threatens to send Lusk the bloody knife used in the murder.

Of the many letters received by police, only two others are given any credence. The first is sent to the Central News Agency on 25 September and begins with 'Dear Boss' and is signed 'Jack The Ripper,' the first use of this moniker. It goes on to threaten to send the police the ears of the next

SUSPECTS

FRANCIS TUMBLETY

Profession: Herbalist, con man

Was he the Ripper?:

An American quack doctor, Tumblety supposedly owned sets of reproductive organs in jars and was thought to be flamboyant – and thus homosexual. While such scant evidence was sufficient for Ripper accusations in the 19th century, Tumblety's extreme misogyny and criminal behaviour led to one investigating officer naming him as his favoured suspect, while a forensic analyst deemed his handwriting bore a similarity to the Ripper letters.

SIR WILLIAM GULL

Profession: Doctor, Queen's physician

Was he the Ripper?:

Alan Moore's seminal graphic novel *From Hell* suggests that Gull was the Ripper, wiping out a group of women who learned of an illegitimate Catholic heir to the throne fathered by Prince Albert Victor. The Queen's surgeon, most famously played by Ian Holm in a film adaptation, is portrayed either as a diligent professional, thoroughly insane or acting as an agent of higher powers, both corporeal and divine. None are taken seriously.

WALTER SICKERT

Profession: Artist

Was he the Ripper?:

Famed for his avant-garde paintings, Sickert was open about his interest in Ripperology. After his death, Sickert was accused of being an accomplice – or even committing the murders himself – in various books, including one by crime novelist Patricia Cornwell, who claims to have matched Sickert's DNA to one of the Ripper letters. The theory is widely dismissed among historians.

Image Sources 1. Public Domain: A Sketch of an Eventful Career by Francis Tumblety 2. Public Domain. 3. Public Domain; National Portrait Gallery, London.

JACK'S VICTIMS?

Martha Tabram

Separated from her husband and with a reputation for excessive drinking, Martha Tabram was destitute by August 1888 and making a living from prostitution. Her body was discovered with 39 stab wounds but she had not been further mutilated. Tabram is not generally considered an official 'canonical' victim of the Ripper.

Polly Nichols

Estranged from her husband and children, Polly Nichols had been in and out of workhouses for over five years by the time of her death. She had earned enough money for a bed on the night of her murder but spent the money on alcohol, forcing her back onto the streets.

Annie Chapman

Known as Dark Annie due to either her hair or her black moods, 47-year-old Chapman had fallen on hard times following the death of her husband, birth of a handicapped child and the death of another. Although she had previously sold flowers and relied on an allowance from her husband, his death forced her into prostitution to support herself financially.

Liz Stride

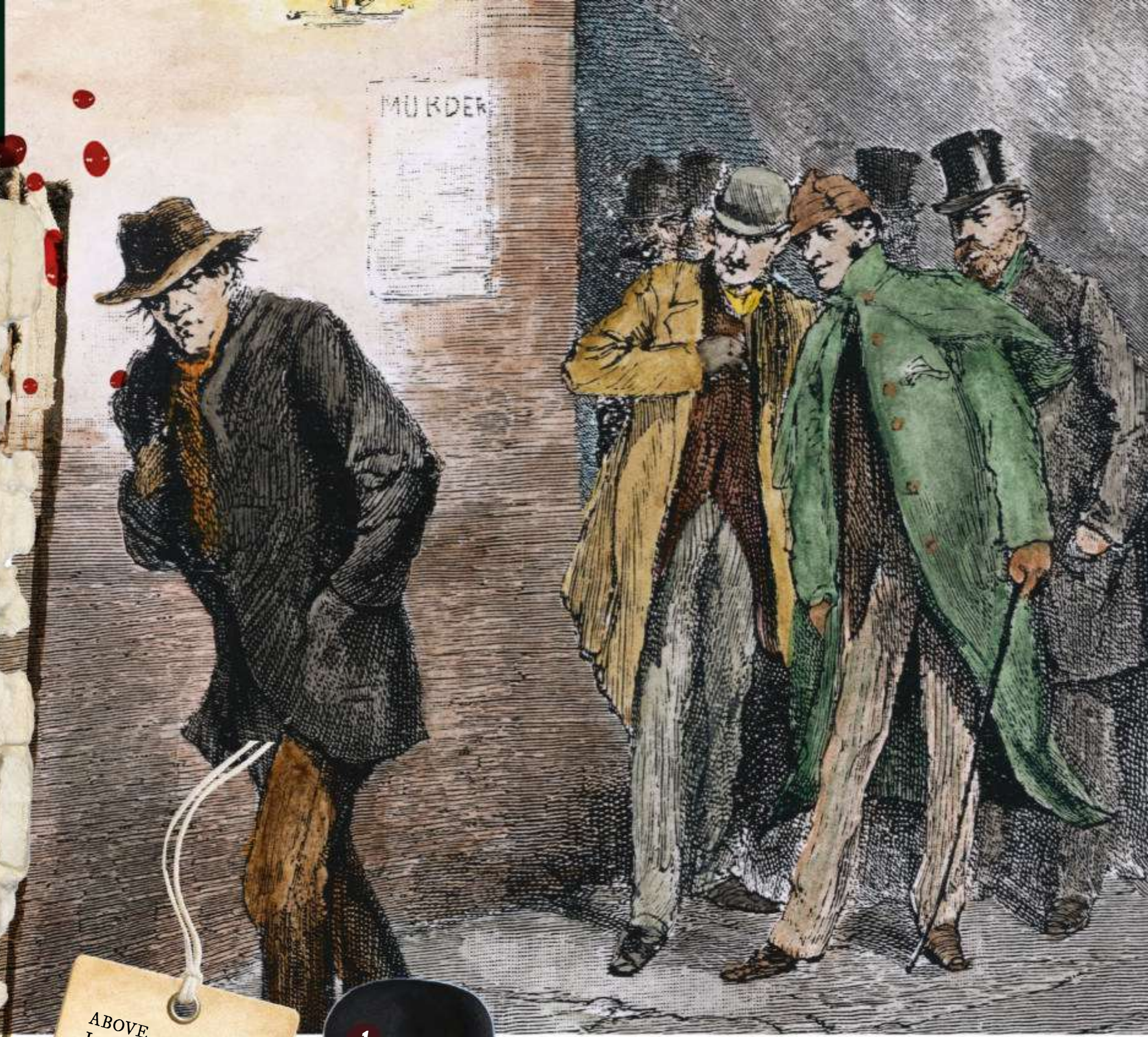
Known as Long Liz, possibly due to her surname or appearance, Stride was a Swedish immigrant given to flights of fancy and worked as a prostitute on the streets of Whitechapel. Some Ripperologists question whether Stride was a Ripper victim as her body was not mutilated; others suggest that the killer was interrupted in the act.

Cathy Eddowes

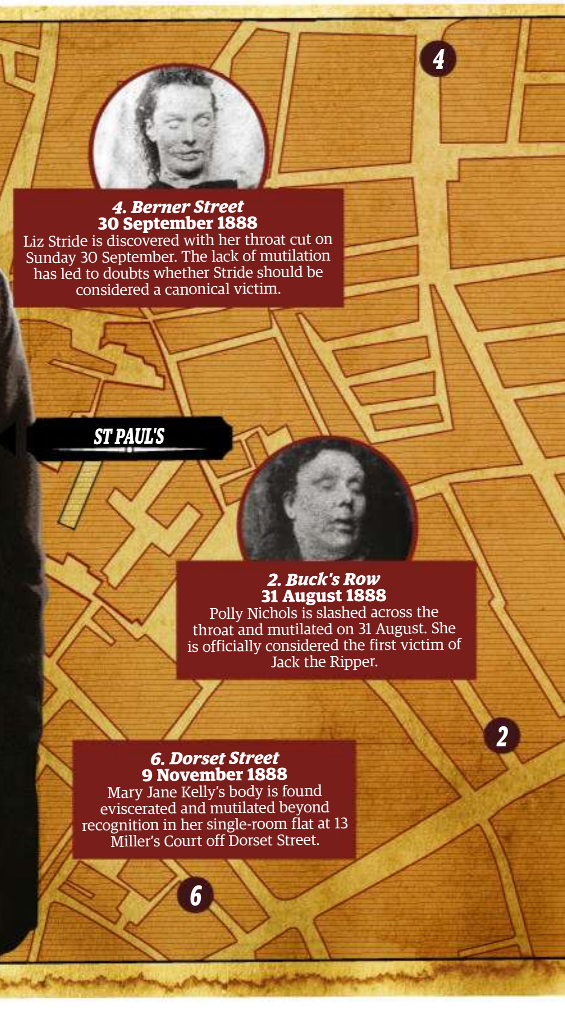
The second victim in the so-called 'double event' on 30 September, the 46-year-old Eddowes was known as an intelligent, striking and jolly woman who had moved to London from Wolverhampton. There's some doubt as to whether Eddowes worked as a prostitute, though she was seen talking to a stranger minutes before her death.

Mary Jane Kelly

The last of the canonical murders, Kelly did not quite fit the established profile. While working as a prostitute, Kelly had her own lodgings and, at 25, was much younger than the other victims. Her murder was by far the most brutal of all the Ripper's crimes, resulting in her body being removed not by stretcher, but in eight buckets.



ABOVE Jack the Ripper has become one of the world's most famous bogeymen



4. Berner Street
30 September 1888
Liz Stride is discovered with her throat cut on Sunday 30 September. The lack of mutilation has led to doubts whether Stride should be considered a canonical victim.

2. Buck's Row
31 August 1888
Polly Nichols is slashed across the throat and mutilated on 31 August. She is officially considered the first victim of Jack the Ripper.

6. Dorset Street
9 November 1888
Mary Jane Kelly's body is found eviscerated and mutilated beyond recognition in her single-room flat at 13 Miller's Court off Dorset Street.

victim, but while Eddowes' ear has been cut, the pathologist suggests this was coincidental to the Ripper slashing her throat.

The next, received on 1 October, is signed 'Saucy Jacky' and references the 'double event' of the murders of Stride and Eddowes. Although initially given credence due to the apparent foretelling of the murders, the postcard is actually postmarked after the event. Both are widely thought to be hoaxes written after the event, with police even suspecting unscrupulous journalists keen to keep the story alive. The police put constables into plain clothes to blend in with Whitechapel's locals and copies of the letters purporting to be from the Ripper are posted throughout the area in the vain hope that someone will recognise the handwriting in them.

However, Abberline has another problem – the climate of fear and hysteria breeds xenophobia, which finds an outlet in persecution of the local Jewish population. Near to where Eddowes was found is a message scrawled on a wall, implying Jews are responsible for the murders. Five weeks pass without another murder, with an increased police presence and public vigilance at a high.

Mary Jane Kelly, unlike the other murder victims who were all in their forties, is 25 years old and rents a private room. She works as a prostitute and has a fondness for drink, having ended up in London by way of Ireland and Wales, according to various reports. On the morning of 9 November, Kelly's landlord dispatches a lackey to collect the six weeks of rent she owes. He finds only Kelly's body, horribly eviscerated beyond recognition in her flat. Over the fire is a kettle, the solder on which has melted. Abberline surmises that the killer burned Kelly's clothes – which are missing – to provide light in which to carry out his macabre work. The mutilation is so extensive that Dr Bond believes the murderer would have been at work for at least two hours. Kelly's organs have been removed from her chest and abdominal cavities, her face destroyed and heart missing.

The brutality of the killing reignites fear across Whitechapel, so Scotland Yard announces a pardon for anyone with information leading to the arrest of the Ripper. However, at the height of his notoriety, the Ripper disappears. Just as quickly as his reign of terror on the East End began, it ends. While there are superficially similar murders in 1889 and 1891, it is not believed the same man committed them. The investigation slowly winds down but the Ripper lives on in the public's consciousness. The Whitechapel murders have also galvanised politicians into acting to improve the state of the East End's slums, many of which are cleared over the following decades. Abberline moves back to Scotland Yard, receives a promotion to the rank of chief inspector and retires in 1892.

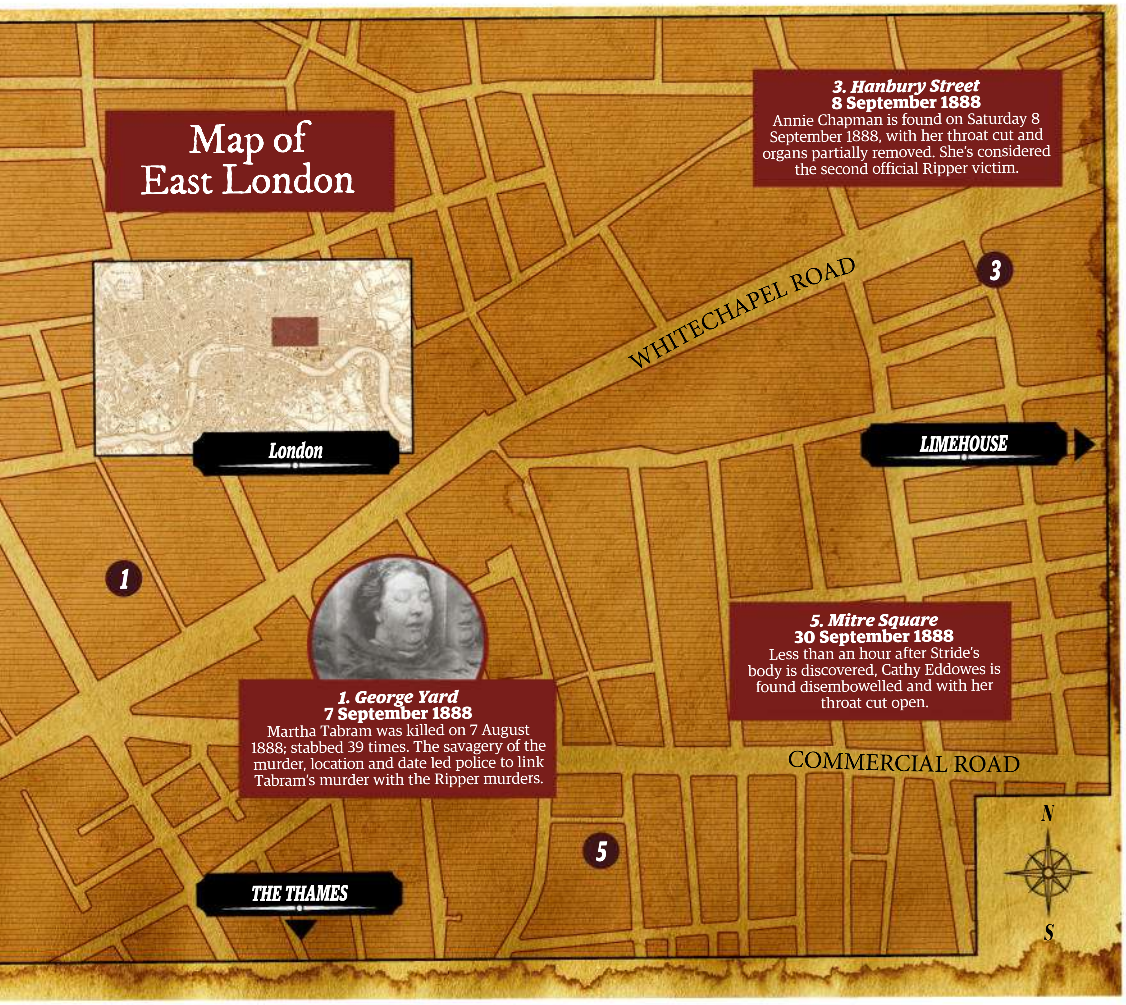
While opinion of the identity of the Ripper may be divided, most experts believe that only incarceration, removal from Whitechapel or death would have prevented the Ripper from killing again; having been forced to kill from some sort of compulsion he would have been unable to resist had he remained in the area and at liberty. In 1894 Metropolitan Police Chief Constable Melville Macnaghten publishes a report that names three suspects – John Druitt, Aaron Kosminski and Michael Ostrog – as three likely candidates. However, factual inaccuracies blight the report, while Ostrog was likely imprisoned in France at the time of the murders. Macnaghten's report is indicative of the lack of sound factual bases behind many Ripper accusations.

As for the man in charge of the investigation at the time, Abberline's favoured candidate was Seweryn Antonowicz Kłosowski, also known as George Chapman, a Polish immigrant hanged in 1903 for murdering three of his mistresses. Chapman worked as butcher, was known to be paranoid and to carry a knife, lived near the location of the first murder, matched physical profiles from witness statements and hated women. "I cannot help feeling that this is the man we struggled so hard to capture 15 years ago," said the Ripper hunter in an interview conducted in 1903 with the *Pall Mall Gazette*.

Abberline pointed out that the date of Chapman's arrival in England coincided with the beginning of the murders and that they ceased when he left for the USA, where Chapman was later tried and hanged for murdering his mistresses. Chapman had also studied medicine and surgery in Russia – leading Abberline to state that some of the Ripper murders constituted the work of an expert surgeon. The inspector also recalled a story in which a wealthy American gentleman had offered to pay a sub-curator at a pathology museum for organs – perhaps connecting this anecdote with evidence that the Ripper had removed several organs from his victims.

"It seems beyond belief that such inhuman wickedness could enter into the mind of any man," said Abberline of his theory. However, the retired policeman admitted 15 years later that Scotland Yard was none the wiser as to the Ripper's true identity. The same can be said nearly 140 years later; Jack the Ripper is an enduring mystery whose identity seems destined never to be revealed, despite our best attempts.

> "The brutality of the killing reignites fear across Whitechapel"



Map of East London

3. Hanbury Street
8 September 1888
Annie Chapman is found on Saturday 8 September 1888, with her throat cut and organs partially removed. She's considered the second official Ripper victim.

5. Mitre Square
30 September 1888
Less than an hour after Stride's body is discovered, Cathy Eddowes is found disembowelled and with her throat cut open.

1. George Yard
7 September 1888
Martha Tabram was killed on 7 August 1888; stabbed 39 times. The savagery of the murder, location and date led police to link Tabram's murder with the Ripper murders.

Map Image Sources Map: Getty Images 1. Public Domain; Royal London Hospital Archives and Museum 2. Public Domain; Records of the Metropolitan Police Office, National Archives, catalog number MEPO 3/140 4. Public Domain; Anonymous Private Collection.

Gruesome EXECUTION METHODS

Discover the gory details of some of history's most grotesque and barbaric methods of dealing with criminals

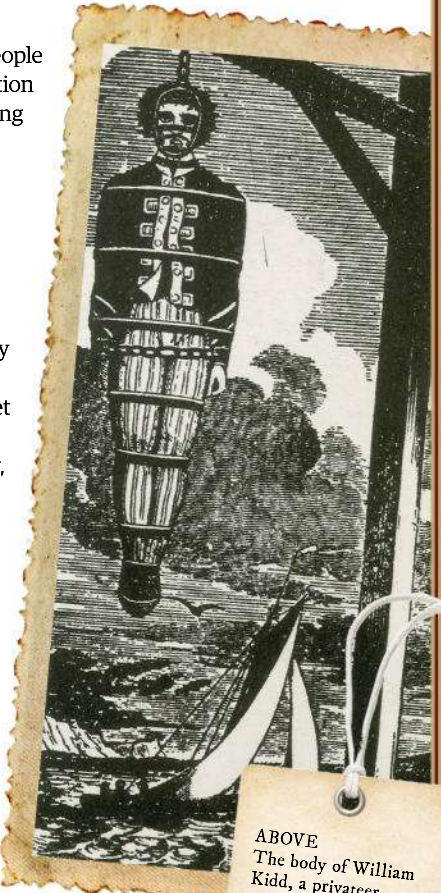
Written by Mark Dolan

Throughout history, people have sought ways of punishing the worst crimes, and making an example of the guilty. Here we present seven of the most gruesome and gory execution methods ever inflicted. From corpses gently swinging in the breeze to condemning someone to be eaten by maggots from the inside out, this is the true extent of human cruelty.

RIGHT
A possible depiction of the blood eagle on a Norse rock carving

GIBBETING

In the first half of the 18th century, the people of Medieval England came up with a solution to the old problem of hanging just not being quite gruesome enough. Enter gibbets. An innovation that allowed criminals to be made an example of, humiliated, and executed in one fell swoop, the gibbet was a human-shaped cage into which criminals could be strapped before being suspended high in the air. Gibbets were a severe alternative to hanging and in reality were far more than simply a method of execution. Suspending a person in a gibbet would be first embarrassing, before being painful, boring and, finally, fatal. However, people would often be left up there long past the point of death; in some cases the condemned would be left up for years or even decades, slowly rotting and being eaten by birds and bugs. They were made to last, heavily constructed, high off the ground and made to swing and eerily creak, becoming landmarks over time. Although a rare punishment, gibbets were impactful and harrowing events.



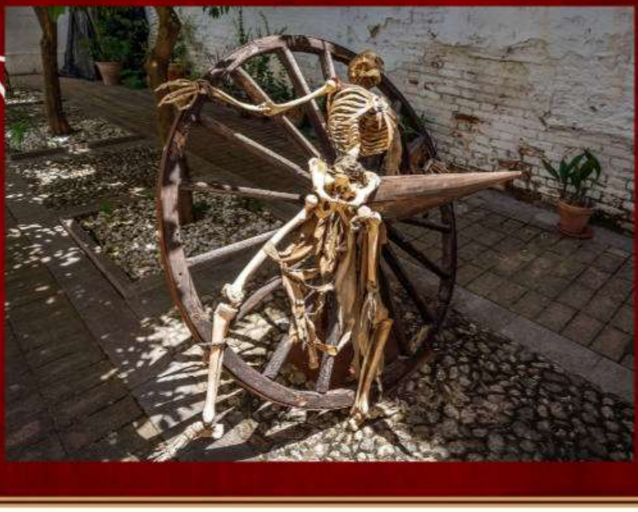
ABOVE
The body of William Kidd, a privateer-turned-pirate who was left to hang in a gibbet

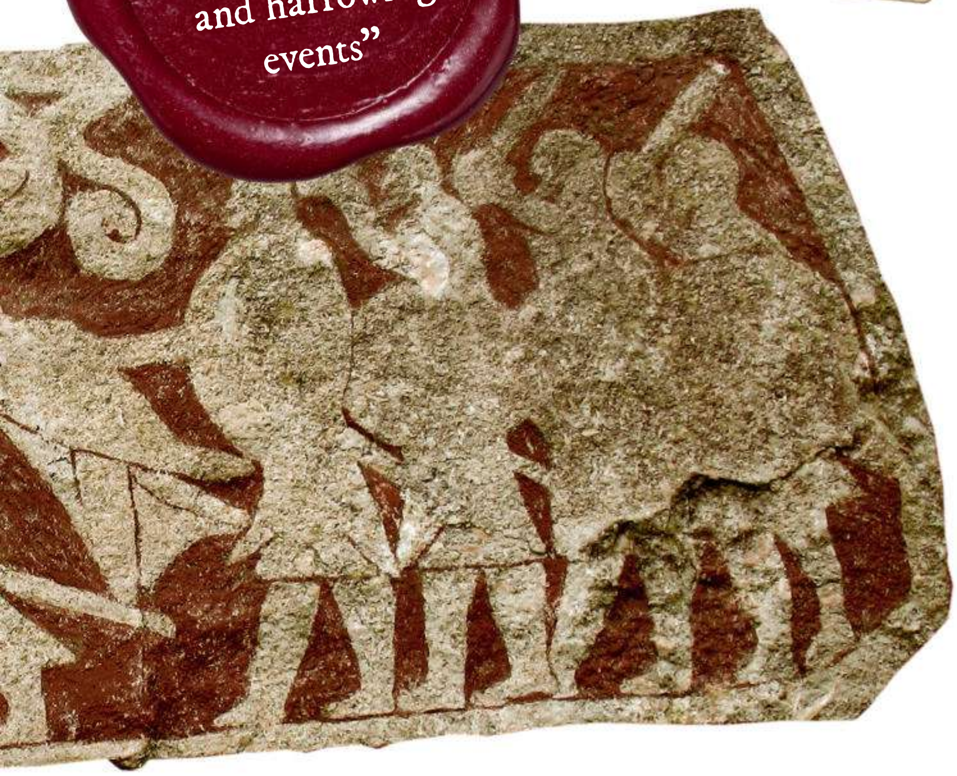
RIGHT
A replica of a skeleton tied up on the spokes of a breaking wheel

“Although a rare punishment, gibbets were impactful and harrowing events”

THE BREAKING WHEEL

A gruesome, if resourceful method of execution is the breaking wheel, also known as the Catherine wheel. Used by the Ancient Romans as a punishment for slaves and Christians, it involved putting the condemned on a bench, placing a large spoked wheel - such as those used for carts - on top of them, and using a hammer to smash the wheel into their victims. In the 4th century CE, the device was used to torture Catherine of Alexandria when she refused to renounce her Christian faith, but the breaking wheel itself broke, an event ascribed to divine intervention. The wheel continued to be used for painful prolonged execution for centuries, with perhaps its peak in the Middle Ages. People could be pinned under the wheel, bent along its curved edge, or strapped to the top of it, while executioners beat the victim with cudgels. In some cases, after the bone breaking, the condemned would be woven through the spokes and left to die a slow, painful death.





BLOOD EAGLE

The Vikings are often thought of as a violent, barbarous and warlike people, and the practice of performing the blood eagle doesn’t do anything to dissuade these ideas. Our knowledge of this method of tortuous execution comes from the late Icelandic sagas, in which it is said that the process involved laying a person on their front, severing their spine with a knife, and pulling their lungs through the incisions until they resembled a pair of bloody wings. Although the truth of its use is uncertain, the grotesque imagery of the ritual has inspired many depictions in modern media, including versions in the TV show *Vikings* and the video game *Assassin’s Creed: Valhalla*. A recent study, undertaken by an interdisciplinary team including doctors, anatomists and a historian of religion from the University of Iceland, suggests that whether or not the blood eagle really was used by the Vikings or was invented for the sagas, it is feasible as a form of torture, and could have been carried out with the tools we know the Vikings had at their disposal.

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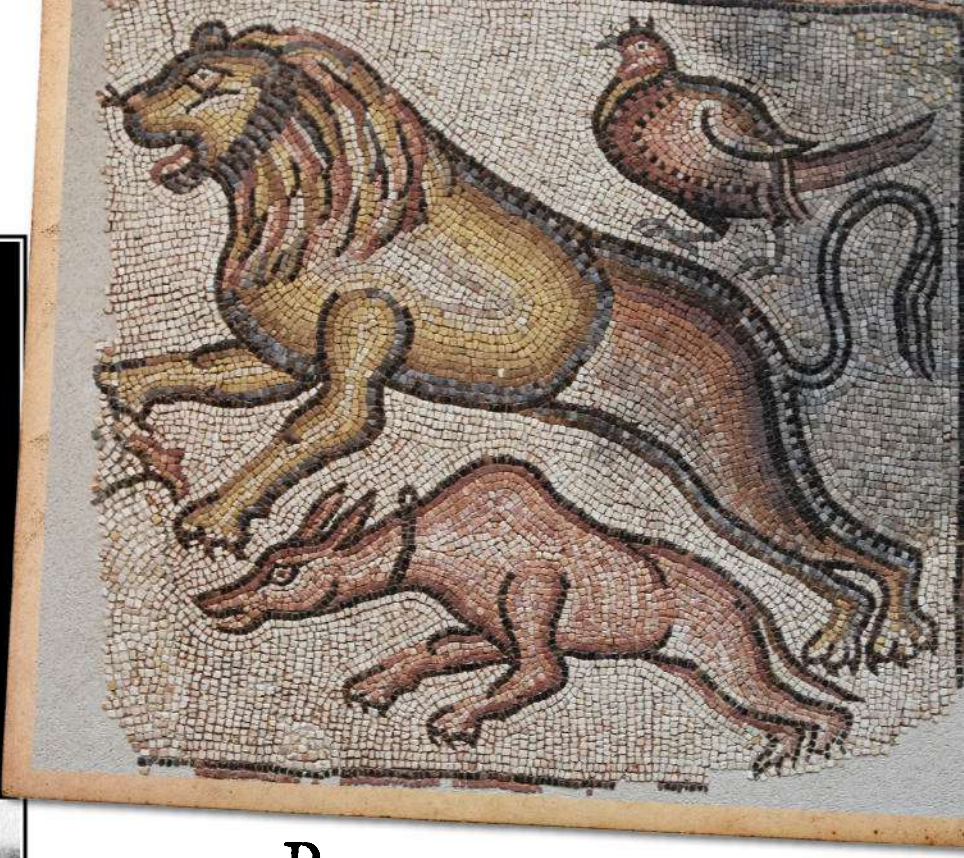
DEATH BY 1,000 CUTS

Lingchi, or death by a thousand cuts, was a torture and execution method carried out in China for over a millennia, with the earliest evidence dating to around 900 CE. There are many similarities between lingchi and some European execution methods such as gibbeting, with both leading to the victim dying slowly in public spaces. In lingchi, the condemned would be strapped to a wooden frame or post, and then over a period of time, parts of their body would be cut off one by one until they finally died. Although the result was always death, the punishment also acted as a humiliation and warning to the public, who would be able to see every stage of the slow death. It even played a religious role, as according to the Confucian principle of filial piety, cutting one's body is considered unfilial and so the deceased would be unable to experience a true afterlife.



LEFT
A photograph of lingchi being carried out at the beginning of the 20th century

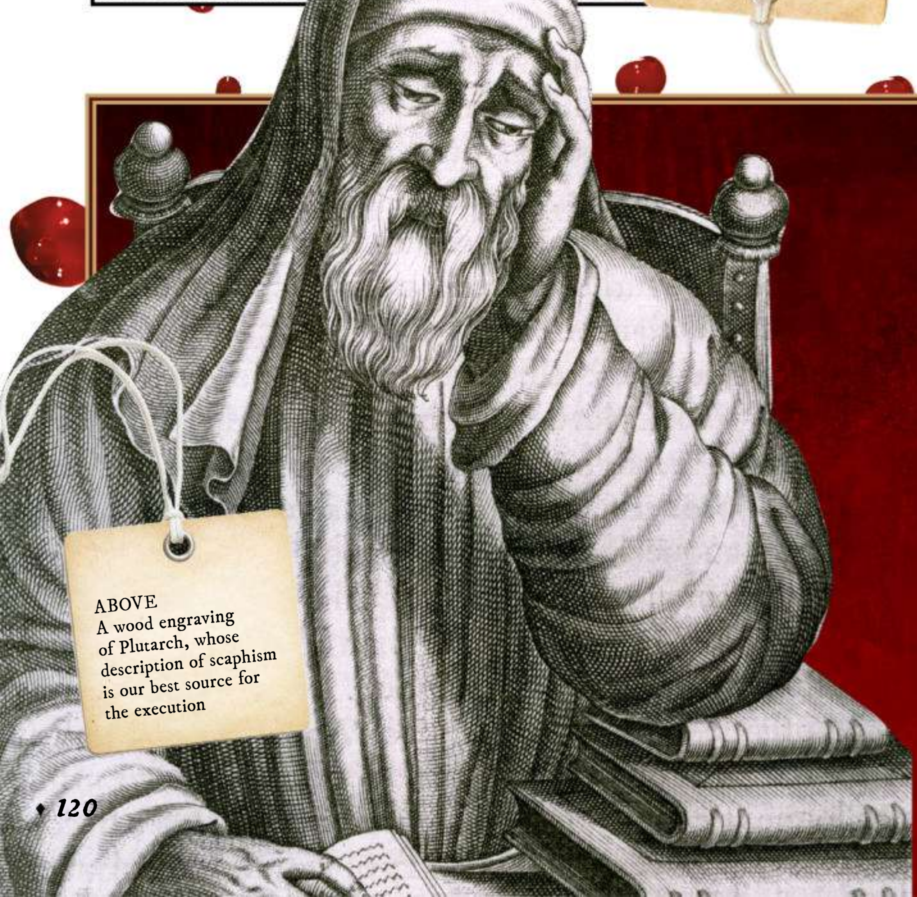
TOP-RIGHT
A Roman mosaic showing some of the animals said to be used in poena cullei

POENA CULLEI

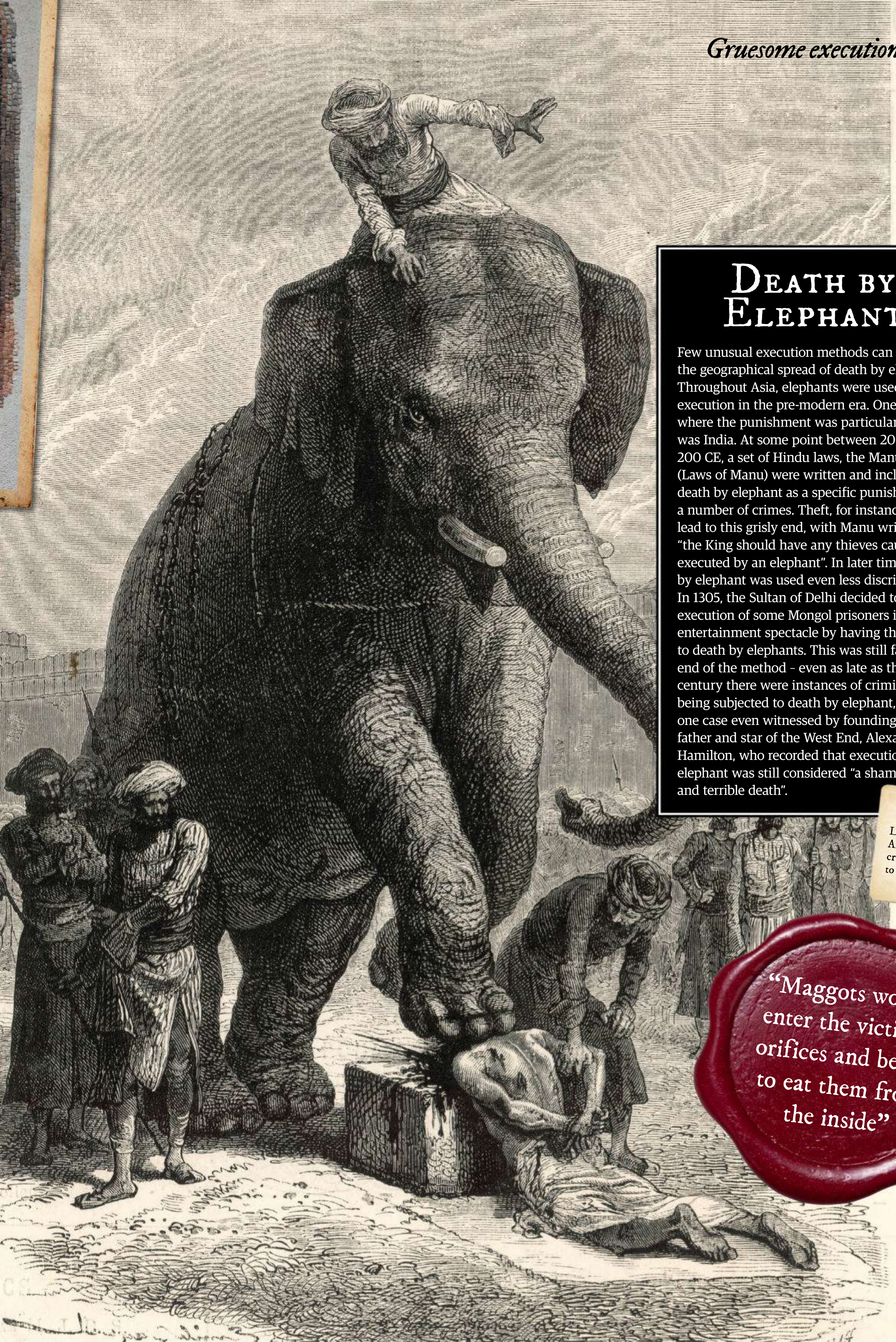
Sometimes particular crimes were seen as necessitating particularly gruesome executions. In Ancient Rome, the crime of killing your father – patricide – was supposedly punished by poena cullei, or 'punishment of the sack'. This unusual form of punishment consisted of putting the accused in a leather sack along with a selection of live animals, often including a snake, dog, monkey and chicken, sewing it up, and throwing it into a river. The details of poena cullei, though, are up for debate. There is only written evidence for the practice, and sources are not always reliable. For example, Cicero, the renowned orator, wrote of the punishment but did not mention any animals being placed in the sack alongside the criminal. He believed that the animals supposedly used were symbolically chosen rather than really interred in the bags. In reality, poena cullei may have been used more often to prevent patricide than to punish it.

SCAPHISM

According to Plutarch, a Greek philosopher and historian in 1st century CE, the ancient Persians employed a particularly brutal form of execution for the worst criminals, such as murderers and traitors. Scaphism was a horrific and drawn-out process that began with the criminal being tied to two boats, with their head, hands and feet outside the boats. It took place in a swamp or similar environment, where the sun could beat down on the victim and wildlife was abundant. They were then force-fed milk and honey, which would drip and dribble down their faces, allowing the executioners to smear it over them, attracting flies and other vermin. Although the milk and honey mixture ensured the victims wouldn't starve to death, it would eventually cause vomiting and diarrhoea, which in turn attracted maggots that would enter into the victim's orifices and begin to eat them from the inside. Being left in this state for days and even weeks on end would result in a horrible, humiliating and excruciating death.



ABOVE
A wood engraving of Plutarch, whose description of scaphism is our best source for the execution



DEATH BY ELEPHANT

Few unusual execution methods can rival the geographical spread of death by elephant. Throughout Asia, elephants were used in execution in the pre-modern era. One country where the punishment was particularly popular was India. At some point between 200 BCE and 200 CE, a set of Hindu laws, the Manusmriti (Laws of Manu) were written and included death by elephant as a specific punishment for a number of crimes. Theft, for instance, could lead to this grisly end, with Manu writing that "the King should have any thieves caught… executed by an elephant". In later times, death by elephant was used even less discriminatingly. In 1305, the Sultan of Delhi decided to turn the execution of some Mongol prisoners into a public entertainment spectacle by having them crushed to death by elephants. This was still far from the end of the method – even as late as the 18th century there were instances of criminals being subjected to death by elephant, with one case even witnessed by founding father and star of the West End, Alexander Hamilton, who recorded that execution by elephant was still considered "a shameful and terrible death".

LEFT
An engraving of a criminal being crushed to death by an elephant

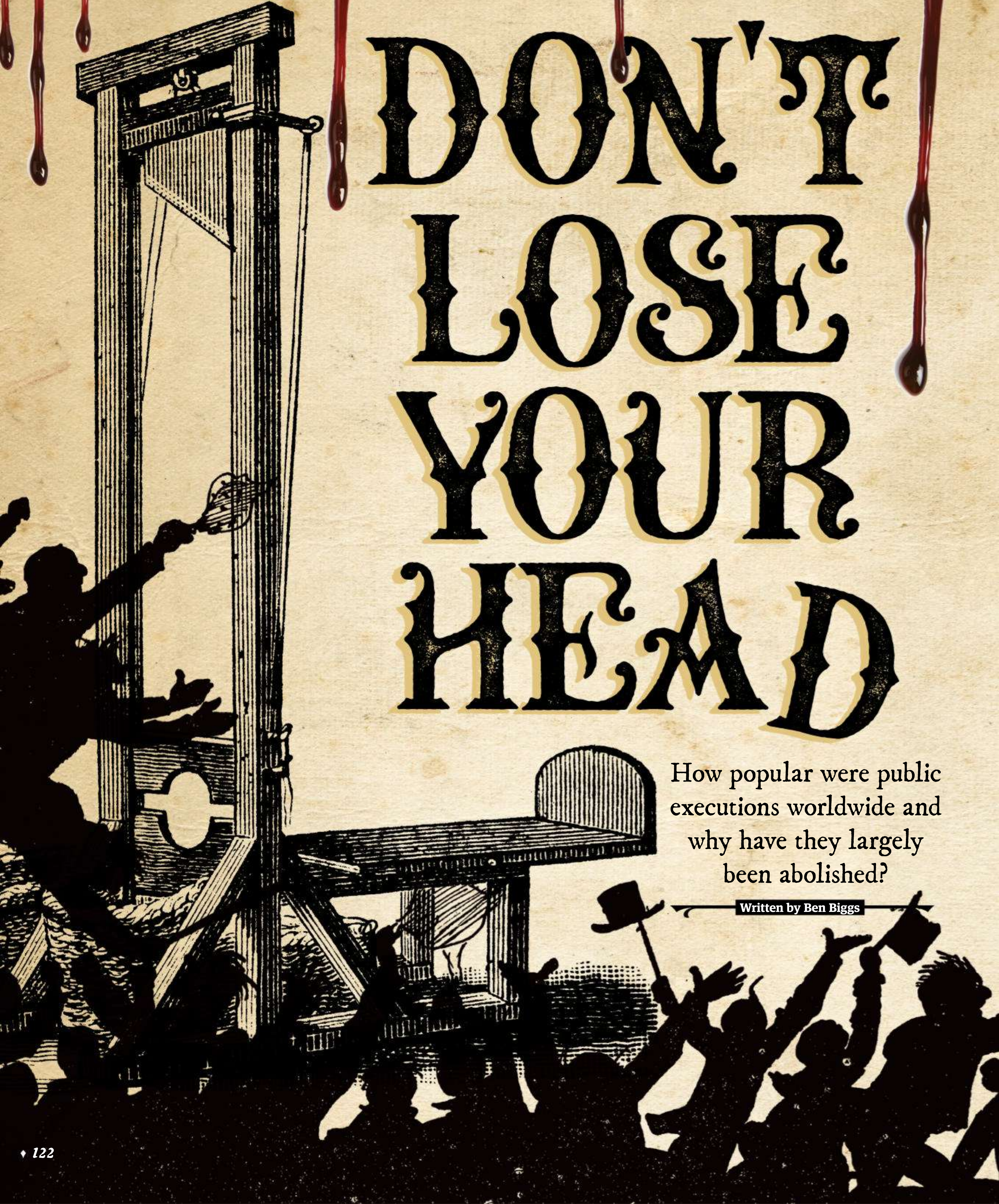
> "Maggots would enter the victim's orifices and begin to eat them from the inside"

© Getty; Alamy

DON'T LOSE YOUR HEAD

How popular were public executions worldwide and why have they largely been abolished?

Written by Ben Biggs



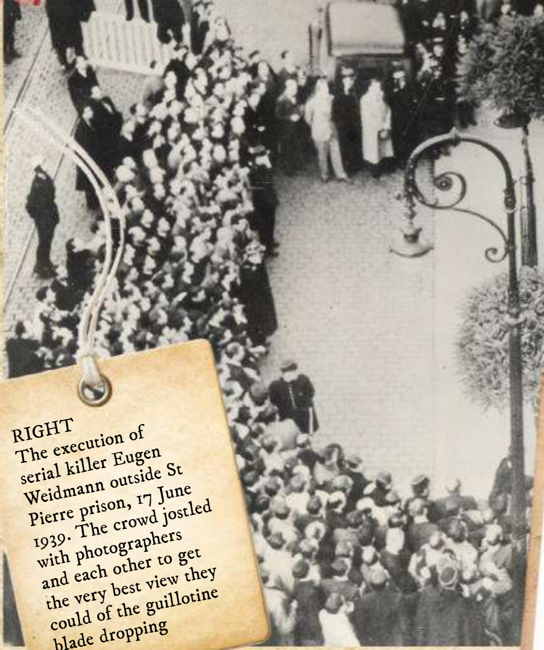
A trapdoor drops open with a thunk, knots creak – and a transfixed mob falls silent for just a heartbeat. The body drops and the rope pulls taut with a crack, ragdolling limbs and legs that twitch in a hangman's jig, kicking spray from a dark stain that's spreading from the gusset of the condemned's trousers down to their ankles and into the crowd. Faces contort with disgust at the front, a few faces in the rear light up, many let their jaws drift agape as they try to imagine what that person was feeling in those final moments. Though the appetite for public executions has waned in the last century, you don't have to travel far into the past, or to a country in the grip of a dictatorship, to discover a time and place where they were very popular.

On 14 August 1936, in Kentucky, USA, Rainey Bethea was hanged in public. Bethea was Black and had confessed to the rape and murder of Lischia Edwards, an elderly white woman. In the Jim Crow heyday of Midwest America, this meant that every white person in the county was owed a front seat at Bethea's execution. But the more serious offense of murder was punishable by the electric chair in Eddyville penitentiary, which posed a problem for court, as Eddyville barely had room for a handful of observers. So prosecutors chose just to pursue a rape charge, for which the mandatory sentence was public hanging in the county. That Friday, hanging day, officials staged the execution in the parking lot so that the crowd of 20,000 wouldn't damage the Owensboro courthouse lawn.

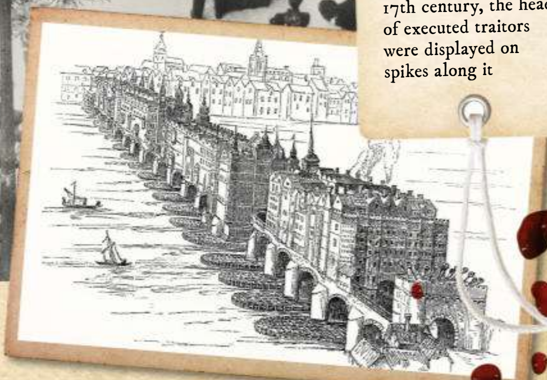
Further back in time, public executions were barbaric to the point of sadism. Traitors like William Wallace were hung, drawn and quartered: the 1305 execution of the Scottish patriot was far more horrific than that portrayed in the Hollywood movie *Braveheart*. He was dragged by a horse through the streets of London, partially strangled with a noose, emasculated and eviscerated while still alive. Only after his genitals and entrails were burned before him did the executioner perform a coup-de-grâce by removing his heart. All this was witnessed by a jeering home crowd – and as if the memory of that day wasn't horrific enough, King Edward had Wallace's head tarred and placed on a spike on London Bridge for all to see.

Hangings were a way of life for medieval and early modern Europeans, considered a merciful death for a common criminal, while beheadings were reserved for the blue bloods. The execution of Charles I in Whitehall, London, on 30 January 1649, was attended by a huge congregation. The axeman expertly decapitated Charles in a single blow, then held the king's head up for a moment before dropping it into the crowd. The soldiers that lined the platform swarmed over it like sharks to chum, taking locks of hair or dipping handkerchiefs and strips of cloth into the bloody stump. Taking souvenirs at high-profile public executions was as common then as autograph hunting is at a football game today, and this only died out with the end of public executions.

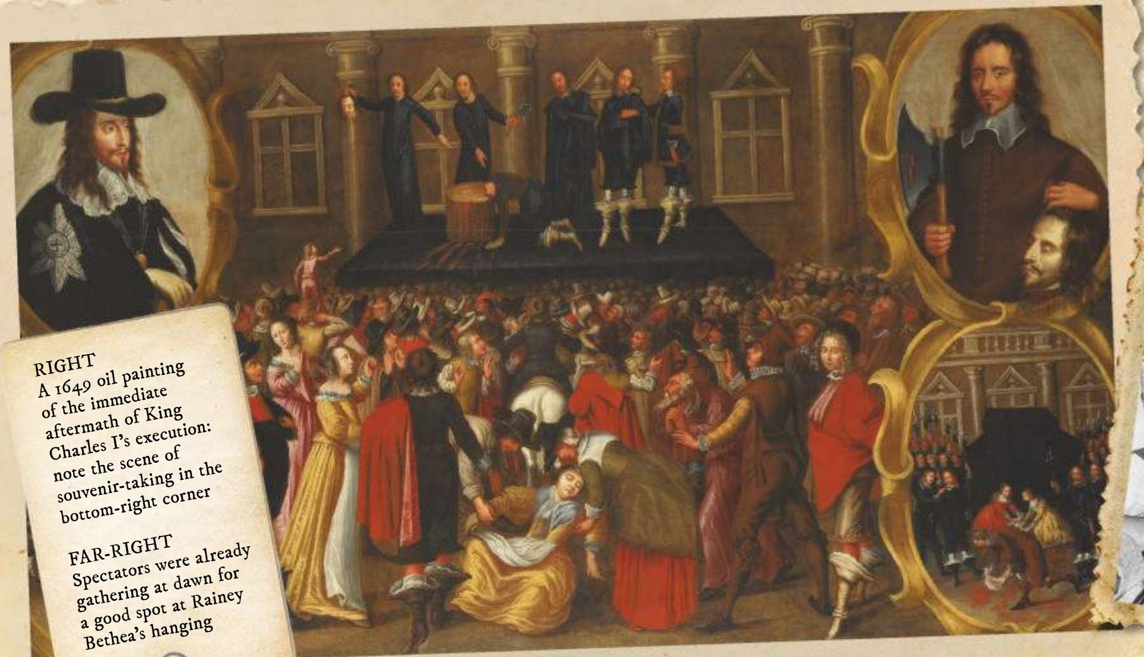
A handful of countries still practice them today, mainly those with authoritarian regimes like Iran, Afghanistan and North Korea. Here, it matters less about retribution or being a deterrent; public executions are mostly about optics – political leaders flexing before their nation. In the West, politicians abolished public executions decades ago, fearing a lowbrow culture revelling in these displays would spread through society. Kentucky lawmakers were embarrassed by the media circus surrounding the execution of Rainey Bethea, and couldn't amend the laws to make executions private quickly enough. And French president, Albert Lebrun, was so appalled by the "hysterical behaviour" of spectators after serial killer Eugen Weidmann was publicly guillotined in 1939 that he outlawed all public executions with immediate effect. If they were to be reinstated in either of these countries today, would they be as popular? Arguably they would. But as long as modern ethics exists to bring our morbid curiosity sharply in line, you won't be going to watch a good weekend hanging any time soon.



RIGHT
The execution of serial killer Eugen Weidmann outside St Pierre prison, 17 June 1939. The crowd jostled with photographers and each other to get the very best view they could of the guillotine blade dropping



BELOW
The medieval London Bridge was dismantled in 1831 but up until the 17th century, the heads of executed traitors were displayed on spikes along it



RIGHT
A 1649 oil painting of the immediate aftermath of King Charles I's execution: note the scene of souvenir-taking in the bottom-right corner

FAR-RIGHT
Spectators were already gathering at dawn for a good spot at Rainey Bethea's hanging

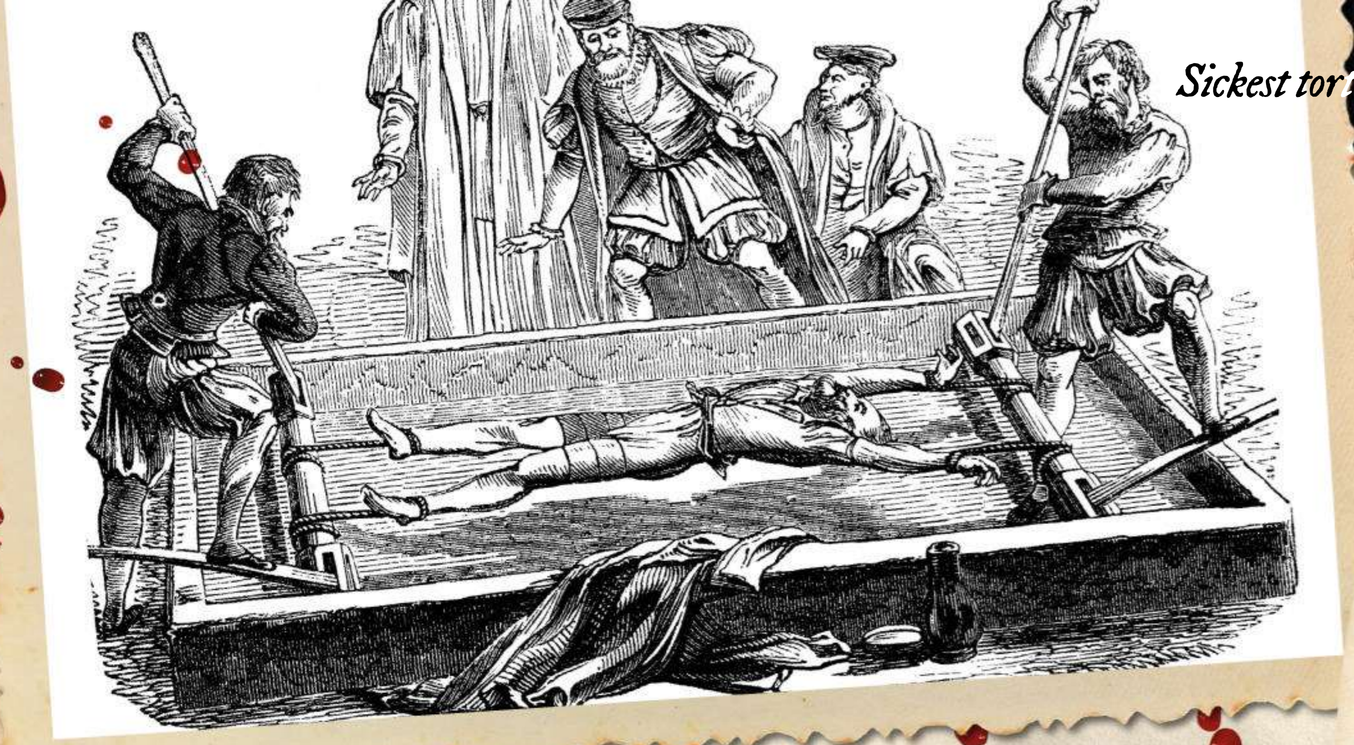
© Getty; Alamy; Source: Wikipedia Commons/Public Doamin

Sickest TORTURE METHODS

Seven of the most grisly, gory and gruesome forms of torture from throughout history

Written by Callum McKelvie

Never underestimate a human's cruelty to a fellow human. Throughout history, torture has been used to coerce an individual to confess to a crime, part with information, or simply to prolong an agonising death. From being roasted alive in a brass bull to stretched limb from limb on the rack, here are seven of the sickest torture methods in history.



LEFT
A Victorian era illustration of torture via the rack

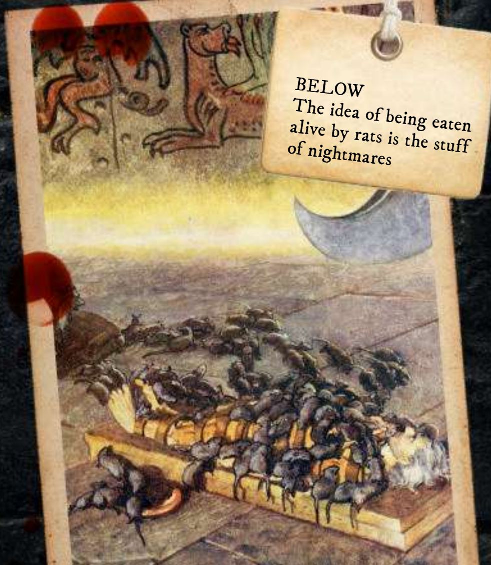
BELOW
The ability to control the amount of pain made the rack particularly nasty

The Rack

Can a torture method be iconic? If so then that dubious honour must go to the rack. Purportedly the creation of John Holland, the Duke of Exeter and constable of the Tower of London during the reign of Henry VI, it became known as 'the Duke of Exeter's Daughter'.

Described by John Paul Davis in his book, *A Hidden History of the Tower of London*, as "an open rectangular frame of oak measuring some six feet in length and raised approximately three feet on four legs with axles fixed to ropes", it was supposedly powerful enough to physically tear its victim apart. The rack had a roller at each end, which was tied to the prisoner's hands and feet and then used to stretch the ropes until the limbs were ripped from their sockets.

The rack proved extremely useful as a torture device, the pain levels able to be monitored and maintained far more than other contemporary methods. As such it was perfect for extracting a confession from a particularly tight-lipped prisoner. The rack was used liberally during the Tudor period, the time when historian John Bellamy claims that the art of torture was formally developed in Britain. Famous victims include the notorious Guy Fawkes.



BELOW
The idea of being eaten alive by rats is the stuff of nightmares

Rat Torture

This terrifying Medieval torture method involved placing a live rat in a bottomless metal cage over the victim's abdomen. A fire would then be lit atop the cage, causing the rat to panic and attempt to escape the only way it could – by eating its way through the victim's stomach. The origins of the practice are unknown but various forms of 'rat torture' exist throughout history. For example, the Roman emperor Nero was said to have been fond of casting his enemies into barrels full of the vicious creatures.

Centuries later, during the Eighty Years' War, Diederik Sonoy (1529-97) was a notorious ally of William the Silent, the leader of the Dutch Revolt against the Habsburg monarchy. It was Sonoy who supposedly developed the aforementioned system of placing a live rat in an upturned bowl and inducing it to eat its way through a victim.

In 1899, Octave Mirbeau featured this form of torture in his novel, *The Torture Garden*. After reading the novel, one of Sigmund Freud's most famous patients, the 'Rat Man', developed an overwhelming fear of the torture. Whereas some doubt these historical accounts, others appear to have been inspired by them, with Augusto Pinochet's Argentinian dictatorship of 1974 to 1990 just one example of the contemporary use of rat torture.

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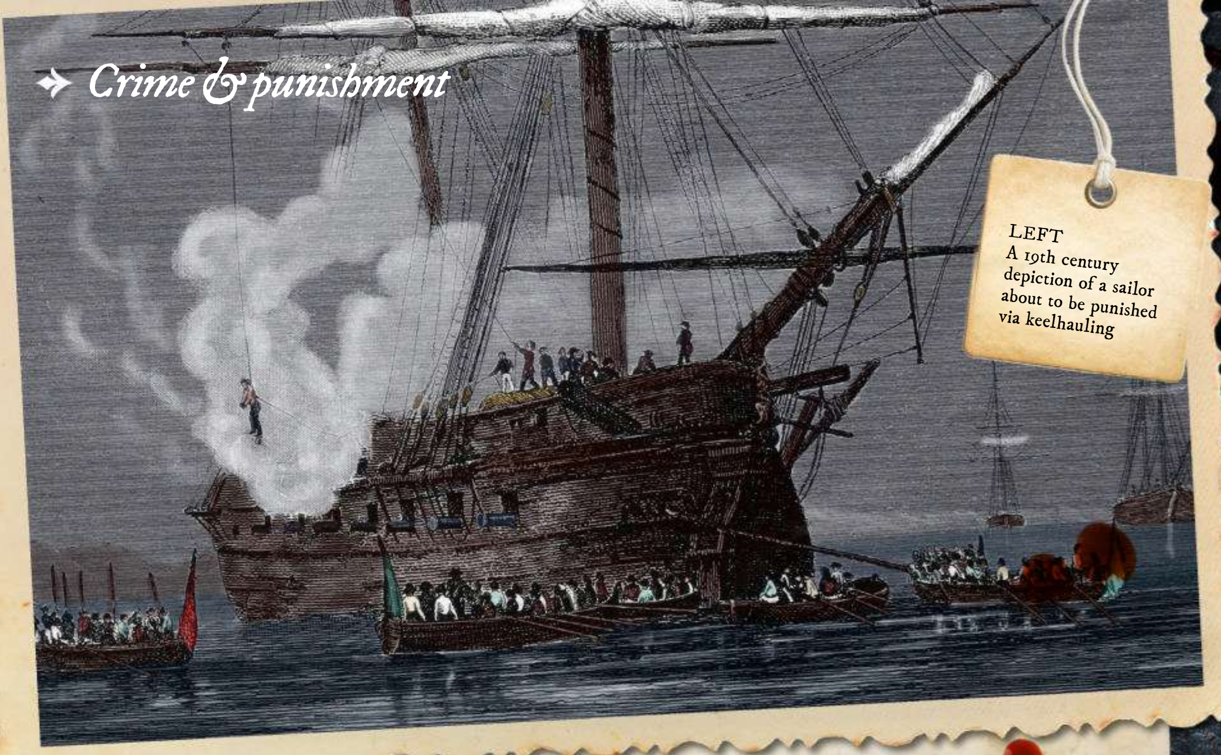


LEFT
A 19th century depiction of a sailor about to be punished via keelhauling

KEELHAULING AND DUCKING

Torture has not just been restricted to dry land – troublesome sailors could find themselves subjected to plenty of watery horrors. Keelhauling was a form of nautical corporal punishment that involved the victim being hung from the main mast and, using an intricate pulley system, dropped into the sea before the poor wretch was dragged beneath the bottom of the ship to the opposite side.

As well as being forced to hold his breath and having his arms practically ripped from their sockets, the most danger actually came from the victim's collision with the base of the boat. Covered with barnacles, their body could be severely cut, bones could possibly be broken, and they could even suffer brain damage if their skull hit against the ship's keel.

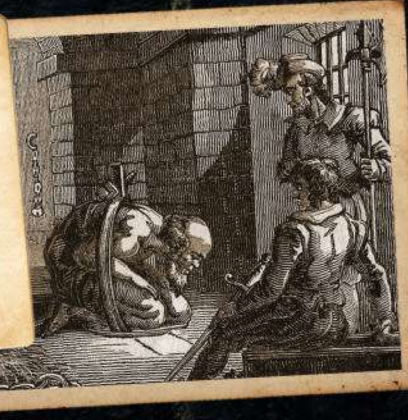
A related form of torture was known as 'ducking'. The prisoner would be forced to sit astride a piece of wood with a cannonball tied to his feet. Once again, using a pulley system, he would be dropped into the sea and raised out, choking and half drowned, only to undergo the entire ordeal once more. The weight of the cannonball ensured the victim plunged deep into the murky depths.

THE SCAVENGER'S DAUGHTER

This relatively inconspicuous metal frame might not look like much, especially compared to the notorious rack, but The Scavenger's Daughter worked on the opposing principle and was equally as horrifying. Also known as Skevington's Gyves, this excruciatingly painful torture device forced an individual's head down, their knees tight against their chest and their feet against their hips. The torturer would then slowly tighten a series of clamps to further increase the victim's agony.

The result was to compress the body so much that the prisoner would begin to bleed from their ears and nose. According to Catharine Arnold in her book, *Underworld London*, there were even cases where "blood exuded from the tips of the hands and feet, or in other cases the pressure was such that the ribs burst and blood was expelled from the mouth and nostrils".

This terrifying device was the creation of Henry VIII's lieutenant of the Tower of London, Sir Leonard Skeffington, sometimes called Skevington. The device was originally named after Sir Leonard but it is suspected that over the years it was corrupted to 'Scavenger'.



RIGHT
One of the victims of the incredibly cruel torture device, the Scavenger's Daughter

FAR-RIGHT
Although relatively inconspicuous, this small device could totally destroy a victim's thumb

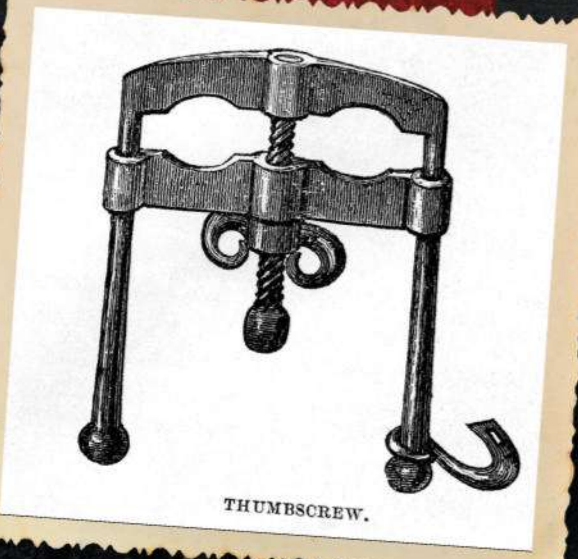
THUMBSCREWS

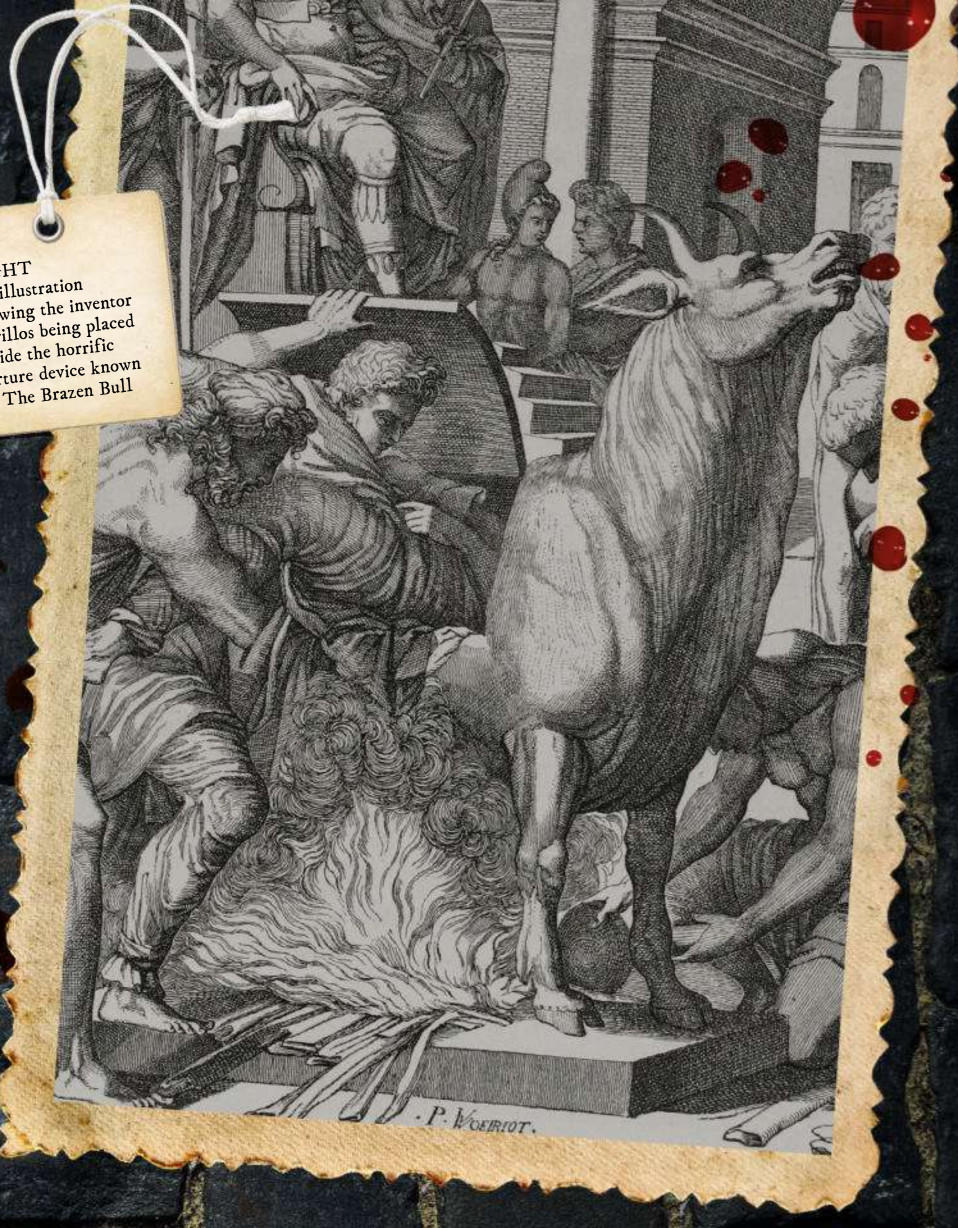
Have you ever considered just how important your thumbs are? They allow you to grasp objects, not to mention write and even eat. Medieval torturers obviously recognised the thumb's importance when they created thumbscrews - devices extremely adept at extracting confessions.

Thumbscrews were relatively benign and innocent-looking compared to other torture devices. The prisoner's thumbs would be placed in the gap between the screw and the bottom metal plate. The screw would then be slowly tightened, asserting increasing pressure until, in some cases, the victim's thumb was nothing but a bloody pulp. Like the rack, they were noted for their ability to assert specific amounts of pain but unlike the rack, thumbscrews were easily transported. They were also a favourite of the Spanish Inquisition.

Originating in early modern Europe, legends abound that the Spanish Armada had onboard a number of thumbscrews, which they intended to be used on captured English prisoners.

> "The screw would then be tightened until, in some cases, the victim's thumb was a bloody pulp"





RIGHT
An illustration showing the inventor Perillos being placed inside the horrific torture device known as The Brazen Bull

The Brazen Bull

This twisted torture and execution device stems from the myths of Ancient Greece. The story states that Phalaris, the cruel and malevolent ruler of Acragas in Sicily, had working for him an inventor by the name of Perillos. Perillos created for Phalaris an intricate device of torture and execution; a huge hollow brass bull, with an opening on the top in which a man could be placed. Once the man was inside, a fire would be set underneath and, as he was slowly cooked, Perillos's horrifically ingenious device would convert the sound of his screams into the baying noises of a bull.

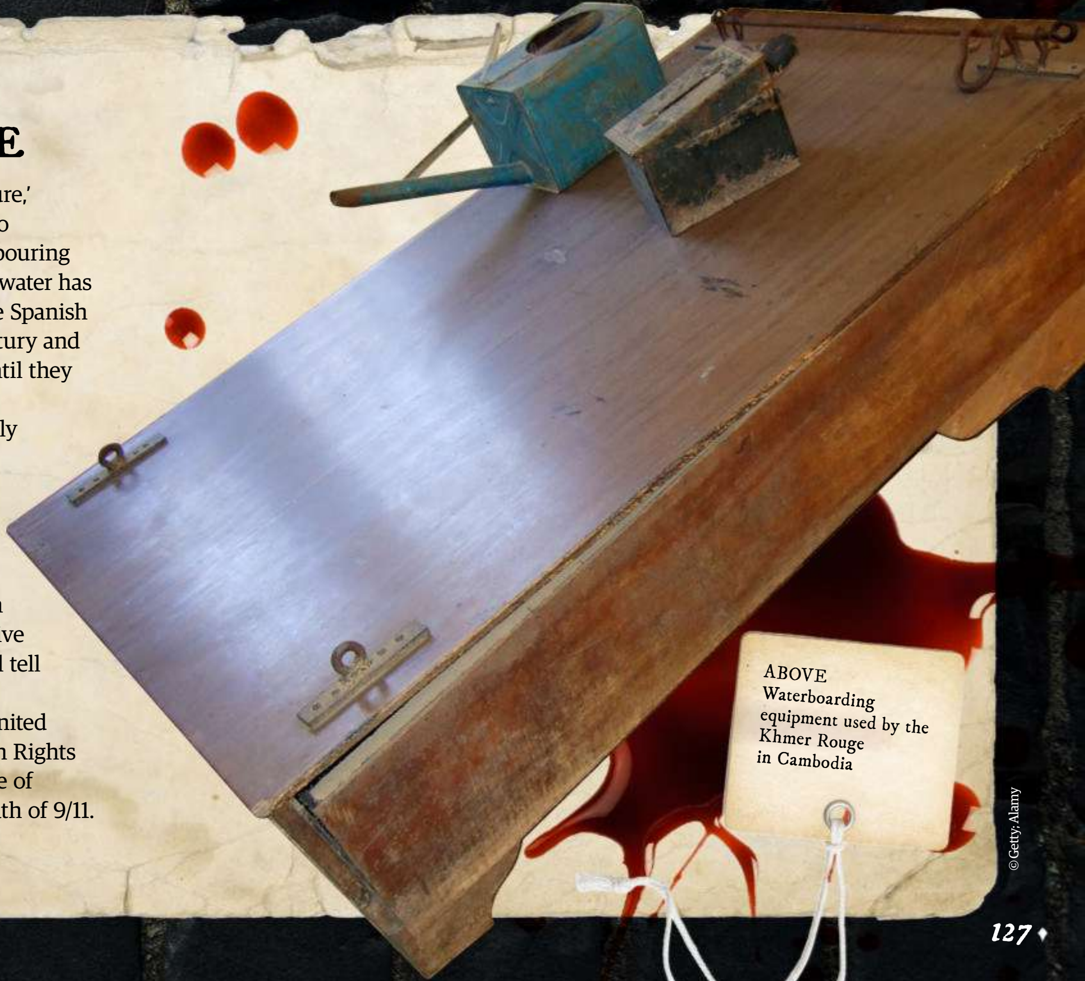
But Perillos underestimated both Phalaris's cruelty and his disgust at the metalworker's creation. Perillos himself was placed into the device to be the first of many that Phalaris would torture inside the bull's brass belly. Legend states, however, that the final victim of the bull was Phalaris himself, roasted by his enemies as his kingdom was overthrown. Although most likely only a myth, the Brazen Bull is a device whose legend continues to inspire horror.

Water Torture

From 16th century accounts of 'Chinese Water Torture,' where the victim is driven mad by dripping water, to waterboarding, in which drowning is simulated by pouring liquid onto a cloth placed over a prisoner's mouth – water has proven a surprisingly versatile tool for torturers. The Spanish Inquisition used waterboarding during the 16th century and were also fond of forcing water into their victims until they were close to bursting.

But this latter method was not limited to use solely by the Spanish Inquisition – following the Spanish-American War of 1898, there were accounts of US troops subjecting Filipino prisoners to 'the water cure'. A letter by AF Miller of the 32nd regiment described how this torture was carried out. "Put a round stick in the mouth and pour a pail of water in the mouth and nose," he began, "and if they don't give up pour in another pail. They swell up like toads. I'll tell you it is a terrible torture."

Distressingly, water torture is not a practice the United States has confined to the past. According to Human Rights Watch, in 2014 Barack Obama acknowledged the use of waterboarding by the CIA in the immediate aftermath of 9/11.



ABOVE
Waterboarding equipment used by the Khmer Rouge in Cambodia

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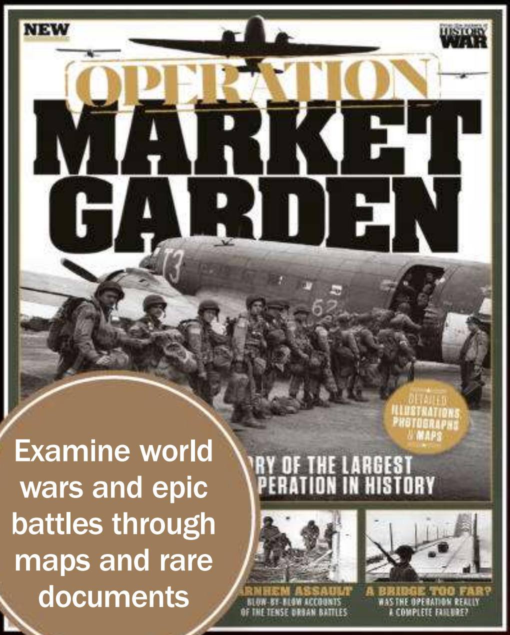

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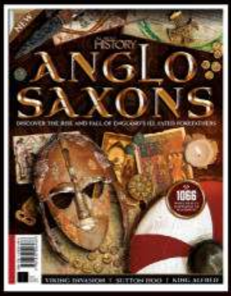

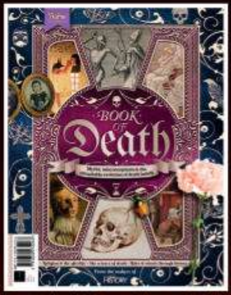

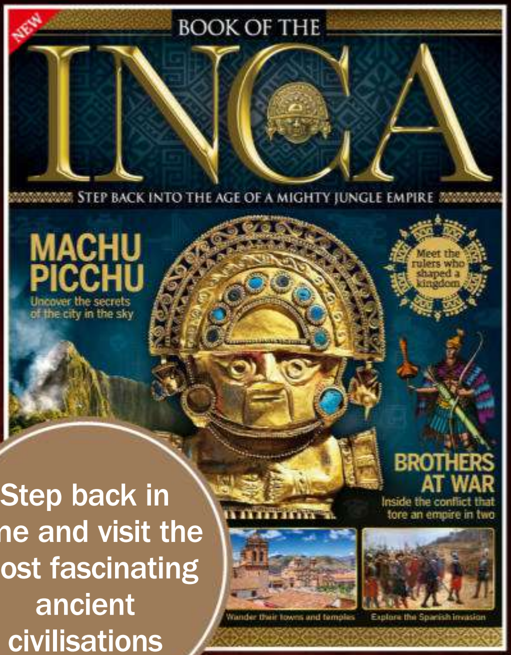

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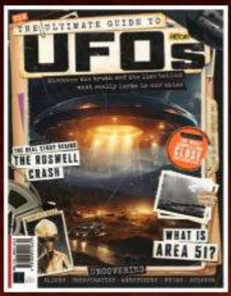

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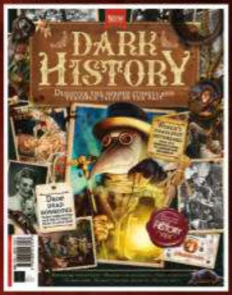

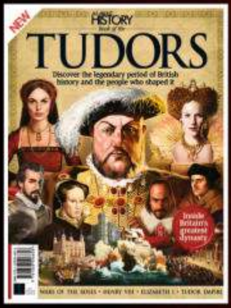

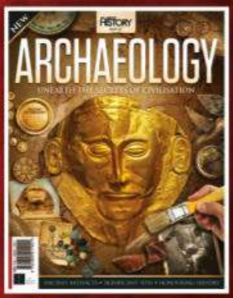

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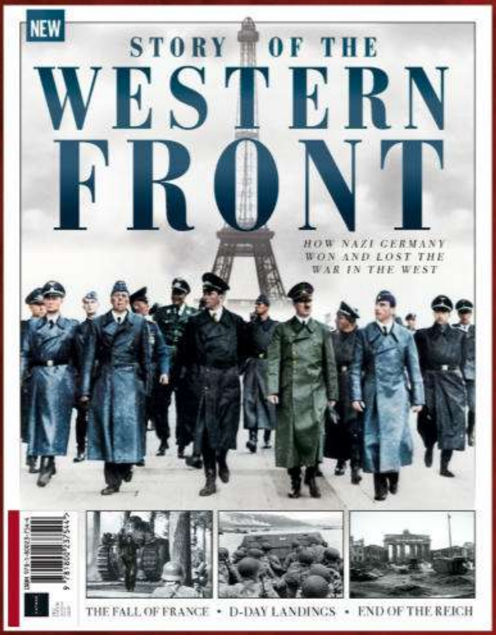

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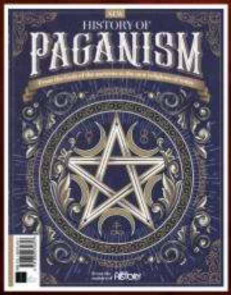

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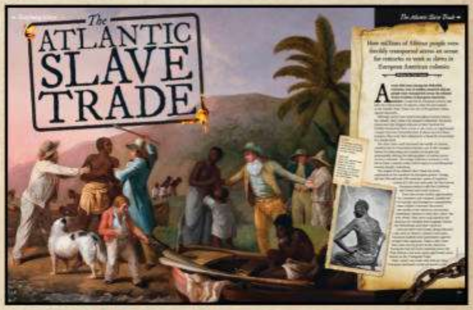

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